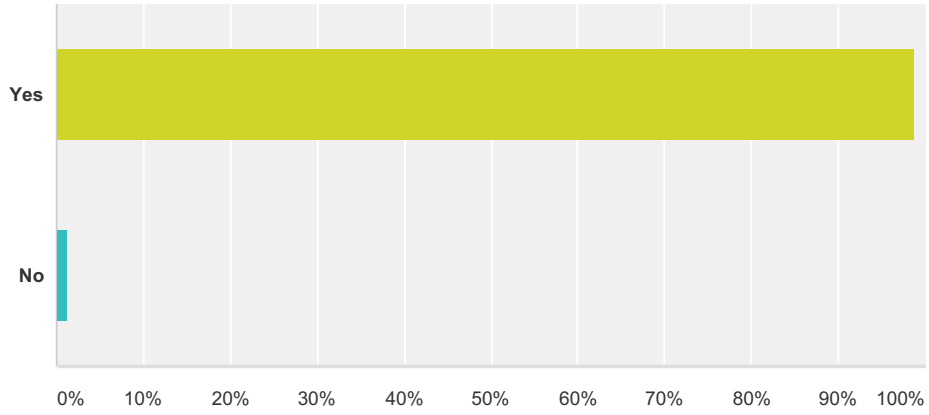
Q1 Are you currently a resident of the State of Michigan?

Answered: 796 Skipped: 4



Answer Choices	Responses	
Yes	**98.74%**	786
No	**1.26%**	10
Total		**796**

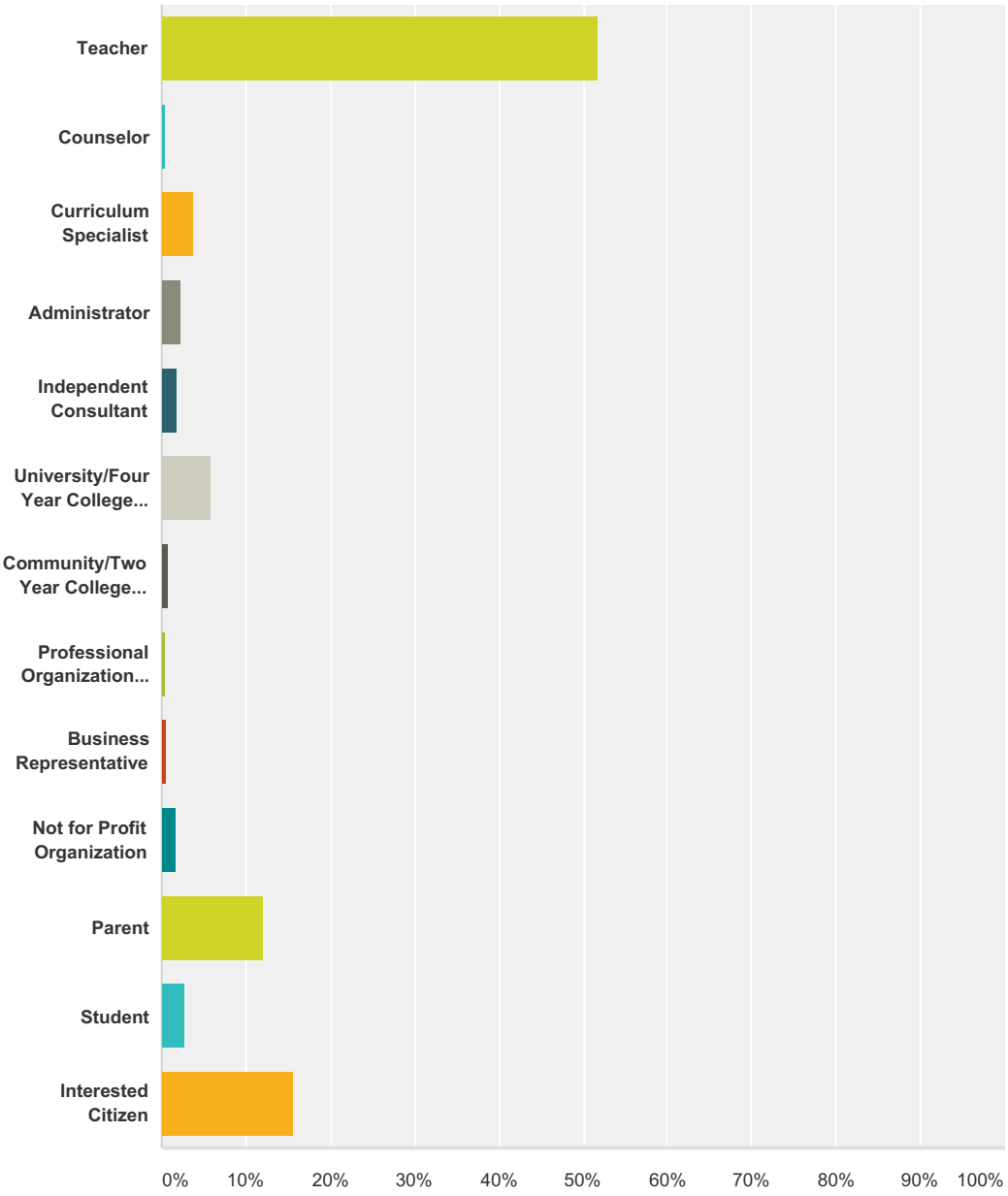
Q2 If not a Michigan resident, please identify state of residence.

Answered: 12 Skipped: 788

#	Responses	Date
1	N/A	10/7/2015 10:40 AM
2	IL	10/5/2015 11:29 AM
3	New York	9/22/2015 6:36 AM
4	NA	9/20/2015 9:46 PM
5	Florida	9/17/2015 7:26 PM
6	Ohio, but I teach Chemistry and Chemistry Methods to preservice elementary, middle school, and high school students for the state of Michigan at a major Moichigan university.	9/16/2015 2:36 PM
7	Virginia	9/10/2015 3:27 PM
8	Michigan	9/1/2015 9:14 AM
9	N/A	8/27/2015 1:55 PM
10	DC	8/25/2015 8:43 AM
11	California	8/24/2015 6:31 PM
12	Wyoming	8/17/2015 7:00 PM

Q3 Please select the ONE role that BEST describes you. If you are a K-12 educator, please answer questions 4-7 as well.

Answered: 755 Skipped: 45



Answer Choices	Responses	
Teacher	**51.79%**	391
Counselor	**0.40%**	3
Curriculum Specialist	**3.84%**	29
Administrator	**2.38%**	18
Independent Consultant	**1.85%**	14

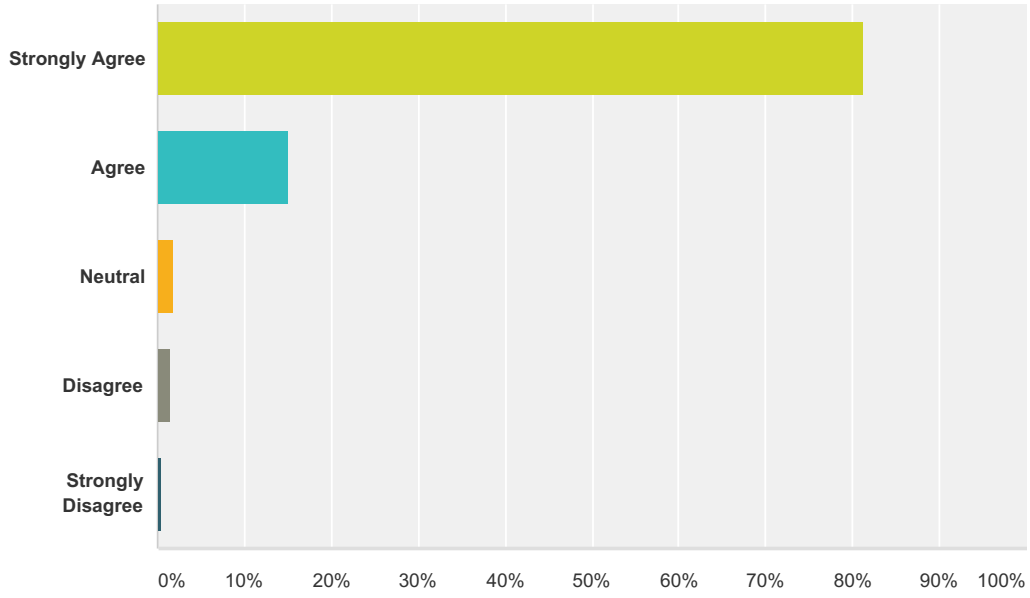
University/Four Year College Faculty Member	**5.83%**	44
Community/Two Year College Professor/Instructor	**0.93%**	7
Professional Organization - Please note affiliation below.	**0.40%**	3
Business Representative	**0.53%**	4
Not for Profit Organization	**1.59%**	12
Parent	**12.05%**	91
Student	**2.78%**	21
Interested Citizen	**15.63%**	118
Total		**755**

#	Other (please specify)	Date
1	School board member	10/9/2015 2:39 PM
2	Science department chairman and instructor	10/7/2015 6:13 PM
3	Grand-parent	10/7/2015 10:40 AM
4	I am a certified Biology and Chemistry teacher currently employed at the University level as a Clinical Coordinator for a health related program.	10/1/2015 2:01 PM
5	Museum program curriculum developer	9/30/2015 10:50 AM
6	Michigan Science Teachers Association	9/30/2015 8:59 AM
7	Retired science teacher	9/30/2015 12:06 AM
8	Teacher, student, parent, retired, agriculture and earth scientist, agricultural climatologist, college instructor, interested citizen	9/29/2015 9:16 PM
9	Parent of 3 grown children, 2 grandchildren	9/29/2015 8:20 PM
10	Postdoctoral Researcher - Computer Science	9/29/2015 8:01 AM
11	Government Biologist	9/28/2015 3:37 PM
12	Curriculum Development Coordinator for Michigan Science Teaching Assessment and Reform (Mi-STAR), Michigan Tech	9/28/2015 10:13 AM
13	ISD consultant	9/22/2015 12:45 PM
14	Parent, Grandparent, Informed Citizen	9/22/2015 10:45 AM
15	grandparent of michigan elementary students	9/22/2015 2:54 AM
16	Self-employed	9/22/2015 1:24 AM
17	Former teacher	9/20/2015 9:12 AM
18	Former teacher	9/20/2015 9:10 AM
19	Grandparent and retired nursing instructor	9/20/2015 8:47 AM
20	Grand parent and very concerned	9/19/2015 8:31 AM
21	Psychologist in private practice who works with children and families	9/18/2015 7:50 PM
22	A student coach	9/18/2015 10:47 AM
23	And a grandparent of a child starting kindergarten in MI	9/18/2015 9:31 AM
24	Artist/Instructor	9/18/2015 9:08 AM
25	Retired Educator	9/18/2015 1:44 AM
26	Retired	9/17/2015 9:05 PM
27	Retired Teacher	9/17/2015 6:33 PM

28	retired educator and parent	9/17/2015 5:23 PM
29	Retired	9/17/2015 2:48 PM
30	Parent of grown children educated in Michigan; former substitute teacher (12 yrs) that taught a lot of middle school science	9/17/2015 2:39 PM
31	former special ed. aide	9/17/2015 2:13 PM
32	retired and part-time freelance	9/17/2015 1:43 PM
33	parent of 3 grandparent of 7, employed by University of Michigan for 43 years.	9/17/2015 12:30 PM
34	Retired/State of Michigan Don't retirees count?	9/17/2015 12:18 PM
35	Grand parent	9/17/2015 11:44 AM
36	Grandparent	9/17/2015 11:43 AM
37	county government recycling outreach	9/17/2015 11:40 AM
38	Retired Public Librarian and School Library Media Specialist	9/17/2015 11:35 AM
39	Former High School secretary for principal and councelor	9/17/2015 11:35 AM
40	University staff	9/17/2015 11:31 AM
41	retired teacher	9/17/2015 11:25 AM
42	Grandparent	9/17/2015 11:22 AM
43	Grandparent	9/17/2015 11:21 AM
44	Retired Teacher	9/17/2015 11:12 AM
45	Grandparent of 4 elementary school students	9/17/2015 11:09 AM
46	Retired public school educator	9/17/2015 11:02 AM
47	retired educator	9/17/2015 10:57 AM
48	physics and computer science teacher, retired	9/17/2015 10:56 AM
49	Higher Ed Staff Member	9/17/2015 10:53 AM
50	retired teacher	9/17/2015 10:49 AM
51	Michigan STEM Partnership	9/16/2015 11:38 AM
52	Chemist and teacher	9/16/2015 10:26 AM
53	School Board Member	9/15/2015 2:55 PM
54	grandparent	9/14/2015 8:42 PM
55	Adjunct College Instructor	9/14/2015 1:53 PM
56	National Science Teachers Association	9/10/2015 3:27 PM
57	School board member	9/5/2015 9:18 AM
58	School board trustee, parent, engineer	8/31/2015 9:03 PM
59	Retired teacher	8/27/2015 7:45 PM
60	With continued curricula development contact with local highschool science department.	8/27/2015 6:09 PM
61	retired skilled trades, with college education.	8/19/2015 6:53 PM
62	Science Intervention Specialist	8/19/2015 1:27 PM
63	Education Consultant	8/17/2015 7:00 PM

Q4 It is important that ALL Michigan students have a strong foundation in science knowledge, skills, and application for success beyond high school and for effective participation in society.

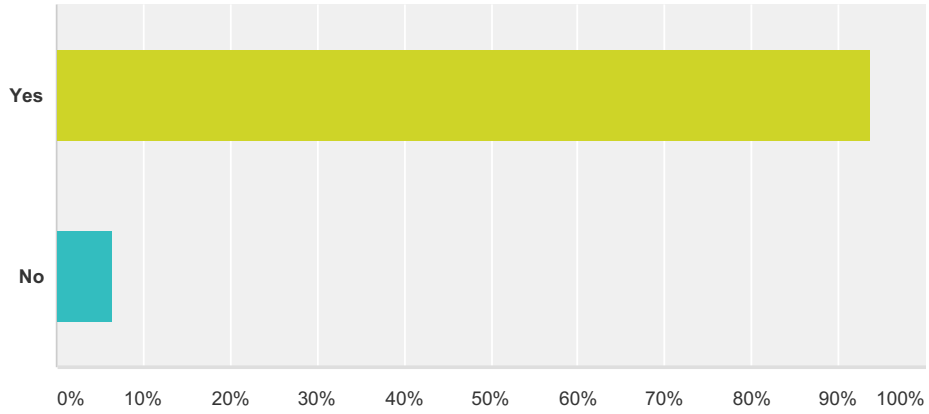
Answered: 768 Skipped: 32



Answer Choices	Responses	
Strongly Agree	**81.25%**	624
Agree	**14.97%**	115
Neutral	**1.82%**	14
Disagree	**1.56%**	12
Strongly Disagree	**0.39%**	3
Total		**768**

Q5 Do you generally support the use of expectations for student performance in academic disciplines, such as Michigan's Science Standards?

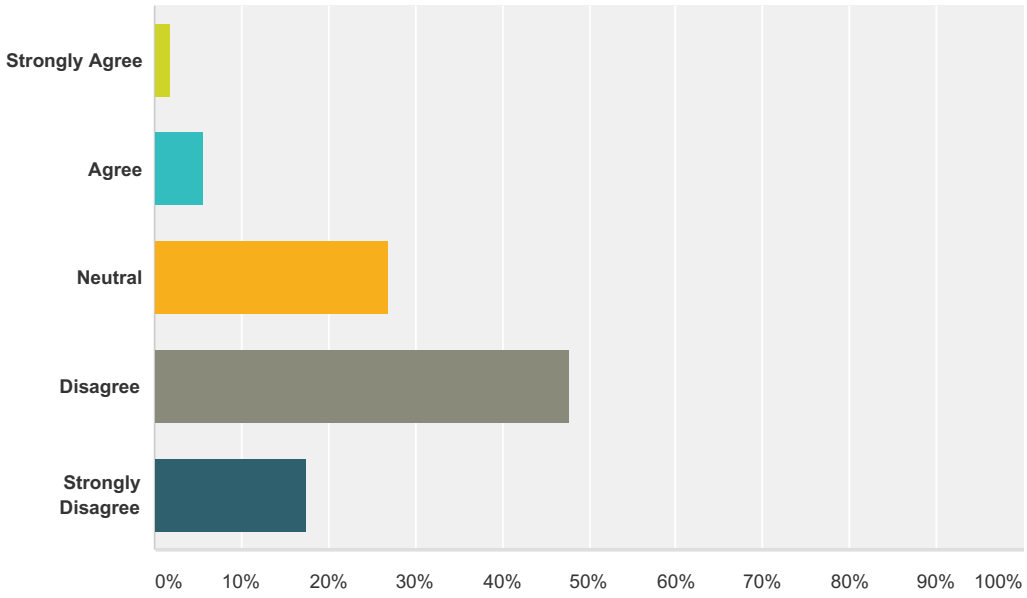
Answered: 753 Skipped: 47



Answer Choices	Responses	
Yes	**93.76%**	706
No	**6.51%**	49
Total Respondents: 753		

Q6 All Michigan students are generally considered proficient in Science.

Answered: 759 Skipped: 41



Answer Choices	Responses	
Strongly Agree	**1.98%**	15
Agree	**5.67%**	43
Neutral	**27.01%**	205
Disagree	**47.83%**	363
Strongly Disagree	**17.52%**	133
Total		**759**

Q7 What is the name of your school district or ISD/RESA?

Answered: 391 Skipped: 409

#	Responses	Date
1	White Cloud Public Schools Newaygo County RESA	10/8/2015 7:27 PM
2	Woodland Park Academy	10/8/2015 4:26 PM
3	Iosco ISD	10/8/2015 3:14 PM
4	Flushing	10/8/2015 1:18 PM
5	Carman Ainsworth High School	10/8/2015 1:02 PM
6	Lapeer ISD	10/8/2015 10:27 AM
7	Genesee ISD	10/7/2015 3:08 PM
8	Zeeland Public Ottawa County	10/7/2015 2:16 PM
9	Ingham	10/7/2015 1:28 PM
10	Oakland Schools	10/7/2015 1:14 PM
11	Oakland Schools	10/6/2015 10:47 PM
12	L'Anse	10/6/2015 8:42 PM
13	MISD (Macomb)	10/6/2015 1:30 PM
14	Birmingham	10/6/2015 9:14 AM
15	Detroit Country Day School	10/5/2015 7:41 PM
16	Kent ISD	10/5/2015 4:59 PM
17	Detroit country day dchool	10/5/2015 4:29 PM
18	Rochester	10/5/2015 4:29 PM
19	Oakland Schools	10/5/2015 4:09 PM
20	Oakland	10/5/2015 3:47 PM
21	Rochester Community School	10/5/2015 2:35 PM
22	Monroe County ISD	10/5/2015 2:12 PM
23	Ingham ISD	10/5/2015 2:05 PM
24	Portage Public Schools	10/5/2015 12:21 PM
25	Genesee Intermediate School District	10/5/2015 9:27 AM
26	Portage Public Schools	10/4/2015 10:08 PM
27	Muskegon Area ISD	10/4/2015 9:01 PM
28	Harper Creek Community Schools, Calhoun ISD	10/4/2015 3:36 PM
29	DPS	10/4/2015 10:40 AM
30	Saginaw	10/2/2015 11:08 PM
31	Imlay City Schools	10/2/2015 4:21 PM
32	Mattawan Condolidated School	10/2/2015 3:15 PM
33	Plymouth-Canton Community Schools/Wayne RESA	10/1/2015 5:16 PM
34	Royal Oak, Oakland Schools	10/1/2015 4:15 PM

35	Battle Creek Public Schools	10/1/2015 3:22 PM
36	Lake Fenton	10/1/2015 3:04 PM
37	Lapeer ISD	10/1/2015 1:18 PM
38	Imlay City	10/1/2015 10:03 AM
39	Linden Community Schools	10/1/2015 10:01 AM
40	Swan Valley Schools	10/1/2015 9:01 AM
41	Kentwood	10/1/2015 8:08 AM
42	Warren Woods	9/30/2015 9:10 PM
43	Oakland Schools	9/30/2015 7:59 PM
44	Wayne RESA	9/30/2015 5:00 PM
45	Harper Woods	9/30/2015 2:51 PM
46	Holt Public Schools	9/30/2015 1:52 PM
47	Michigan State University/ Formerly Detroit Public Schools	9/30/2015 12:25 PM
48	Battle Creek Area Mathematics and Science Center	9/30/2015 11:54 AM
49	Newaygo	9/30/2015 11:45 AM
50	Grosse Pointe	9/30/2015 11:26 AM
51	Oakland Schools	9/30/2015 11:20 AM
52	Berrien RESA	9/30/2015 10:59 AM
53	Olivet in Calhoun ISD	9/30/2015 10:49 AM
54	Frankenmuth	9/30/2015 10:30 AM
55	Ithaca	9/30/2015 10:29 AM
56	Gibraltar Schools	9/30/2015 10:05 AM
57	Walled Lake, Oakland Schools	9/29/2015 2:15 PM
58	KRESA	9/29/2015 12:37 PM
59	N/A	9/28/2015 9:48 AM
60	St.Clair County	9/25/2015 12:58 PM
61	St. Clair County	9/25/2015 12:51 PM
62	Port Huron Area School District	9/25/2015 12:16 PM
63	Kenowa Hills Public Schools	9/25/2015 11:20 AM
64	AMA ISD	9/25/2015 6:53 AM
65	Caro Community Schools	9/24/2015 10:31 PM
66	Wayne county	9/24/2015 7:59 PM
67	University Prep Science and Math	9/24/2015 3:15 PM
68	Dearborn Heights School District #7	9/24/2015 11:44 AM
69	Swartz Creek Community Schools	9/24/2015 11:29 AM
70	Marquette-Alger	9/24/2015 8:18 AM
71	Armada Area Schools	9/24/2015 7:42 AM
72	Oakland	9/23/2015 10:29 PM
73	Dearborn	9/23/2015 9:31 PM
74	Maconmb ISD	9/23/2015 2:58 PM
75	Walled Lake	9/23/2015 12:58 PM

76	MISD	9/23/2015 10:39 AM
77	Don't have one yet	9/23/2015 7:21 AM
78	Holt ISD	9/22/2015 10:26 PM
79	Wayne RESA	9/22/2015 9:03 PM
80	Manistee Area Public Schools	9/22/2015 7:24 PM
81	Crestwood	9/22/2015 6:28 PM
82	Dearborn Heights School District 7	9/22/2015 3:06 PM
83	Manistee Area Public Schools	9/22/2015 1:00 PM
84	Michigan Great Lakes Virtual Academy - Manistee ISD	9/22/2015 12:43 PM
85	Fennville Public Schools	9/22/2015 10:03 AM
86	Rochester Community Schools	9/22/2015 9:38 AM
87	Wayne County	9/22/2015 5:30 AM
88	Wayne	9/21/2015 9:49 PM
89	Washtenaw ISD	9/21/2015 8:02 PM
90	Oakland County	9/21/2015 6:15 PM
91	Dowagiac Union Schools	9/21/2015 4:08 PM
92	Central Montcalm Public Schools	9/21/2015 3:47 PM
93	Gibraltar School District	9/21/2015 2:33 PM
94	Dowagiac Union Schools	9/21/2015 12:29 PM
95	Lewis Cass ISD	9/21/2015 12:28 PM
96	Birmingham Public Schools	9/21/2015 10:58 AM
97	Wayne RESA	9/21/2015 9:03 AM
98	George Crockett Academy	9/21/2015 8:50 AM
99	Kent isd	9/21/2015 5:37 AM
100	GIRESD	9/20/2015 9:57 PM
101	no comment	9/20/2015 4:56 PM
102	Alcona Community Schools	9/20/2015 3:27 PM
103	Mattawan Consolidated Schools	9/19/2015 11:59 PM
104	Crawford AuSable School District	9/19/2015 10:42 PM
105	Delta Schoolcraft	9/19/2015 10:26 PM
106	Hastings Area Schools in the Barry ISD	9/19/2015 4:53 PM
107	Grosse Pointe	9/19/2015 9:31 AM
108	CCRESA	9/19/2015 9:24 AM
109	Birmingham Public Schools	9/19/2015 6:09 AM
110	Chelsea Schools	9/18/2015 4:23 PM
111	CAPS Cadillac Public	9/18/2015 11:36 AM
112	I am retired from the Belmont, MA Public Schools, I currently reside in Bellaire, MI	9/18/2015 10:34 AM
113	Harper Creek Community Schools	9/17/2015 9:25 PM
114	Chesaning Michigan	9/17/2015 7:30 PM
115	Burmingham	9/17/2015 5:19 PM
116	East Lansing	9/17/2015 4:16 PM

117	Southgate Community Schools	9/17/2015 3:30 PM
118	Retired from Warren Consolidated School District	9/17/2015 2:49 PM
119	State of Michigan, Department of Social Services	9/17/2015 2:27 PM
120	Troy Public Schools	9/17/2015 1:15 PM
121	Wayne/westand	9/17/2015 11:09 AM
122	Farmington Public Schools	9/17/2015 11:05 AM
123	MAPS	9/16/2015 3:06 PM
124	Michigan State University Extension	9/16/2015 9:43 AM
125	Wyoming Public Schools	9/14/2015 9:57 AM
126	Eaton	9/13/2015 9:13 PM
127	Forest Hills Public Schools, Kent ISD	9/13/2015 8:47 PM
128	Walled Lake Consolidated District	9/13/2015 7:31 PM
129	Athens	9/13/2015 3:28 PM
130	Plymouth-Canton	9/11/2015 3:06 PM
131	Grandville Public Schools, Kent ISD	9/11/2015 9:27 AM
132	Ionia Middle School	9/10/2015 8:36 PM
133	Huron	9/10/2015 10:59 AM
134	Holt Public Schools	9/9/2015 10:28 AM
135	EUPISD	9/8/2015 10:00 PM
136	Troy	9/8/2015 2:03 PM
137	Sanilac	9/7/2015 1:41 PM
138	Jackson Northwest Community Schools	9/7/2015 9:13 AM
139	Saginaw ISD	9/6/2015 7:10 PM
140	Lansing School District	9/4/2015 9:59 PM
141	Clare-Gladwin RESD	9/4/2015 2:51 PM
142	Kent Intermediate School District	9/4/2015 9:04 AM
143	Birmingham Public Schools	9/4/2015 8:44 AM
144	Wayne Resa	9/4/2015 7:35 AM
145	Gratiot-Isabella	9/3/2015 2:53 PM
146	Grandville Public	9/3/2015 12:58 PM
147	Ann Arbor Public Schools	9/3/2015 10:26 AM
148	North Muskegon Public Schools	9/3/2015 9:40 AM
149	CSD/WISD	9/3/2015 9:29 AM
150	Washtenaw ISD	9/3/2015 9:25 AM
151	Wexford Missaukee ISD	9/2/2015 9:34 PM
152	Dollar Bay - Tamarack City Area Schools	9/2/2015 4:36 PM
153	Jackson ISD	9/2/2015 1:44 PM
154	Birmingham public schools	9/2/2015 1:18 PM
155	Lenawee ISD	9/2/2015 10:50 AM
156	COP-ISD	9/2/2015 9:54 AM
157	Ionia ISD	9/2/2015 8:57 AM

158	Portland Public Schools	9/2/2015 8:56 AM
159	Portland Public Schools	9/2/2015 8:54 AM
160	Portland Public Schools	9/2/2015 8:52 AM
161	Portland Public Schools	9/2/2015 8:52 AM
162	Branch ISD	9/1/2015 9:03 PM
163	Calhoun	9/1/2015 7:55 PM
164	Calhoun ISD	9/1/2015 6:48 PM
165	Troy school district	9/1/2015 6:16 PM
166	Gratiot-Isabella RESD	9/1/2015 5:02 PM
167	Midland	9/1/2015 4:23 PM
168	Clarkston Community Schools	9/1/2015 4:03 PM
169	Kalamazoo Public Schools	9/1/2015 2:43 PM
170	Kalamazoo Public Schools	9/1/2015 2:42 PM
171	Kalamazoo RESA	9/1/2015 2:41 PM
172	Kalamazoo Public Schools	9/1/2015 2:41 PM
173	Kalamazoo Public Schools	9/1/2015 2:40 PM
174	Kalamazoo Public Schools	9/1/2015 2:40 PM
175	Kalamazoo Public School	9/1/2015 2:40 PM
176	KPS	9/1/2015 2:40 PM
177	kalamazoo	9/1/2015 2:40 PM
178	Kalamazoo Public Schools	9/1/2015 2:39 PM
179	Kalamazoo RESA	9/1/2015 2:39 PM
180	Kalamazoo Public Schools	9/1/2015 2:39 PM
181	Kalamazoo Public School (KPS)	9/1/2015 2:39 PM
182	Kalamazoo Public Schools	9/1/2015 2:38 PM
183	Wayne	9/1/2015 2:26 PM
184	Clarkston Community Schools	9/1/2015 2:15 PM
185	Wayne RESA	9/1/2015 1:44 PM
186	Hudsonville Public Schools	9/1/2015 1:38 PM
187	Ottawa area isd	9/1/2015 1:29 PM
188	Hudsonville Public	9/1/2015 1:26 PM
189	Hudsonville Public Schools	9/1/2015 1:26 PM
190	Hudsonville Public Schools	9/1/2015 1:25 PM
191	Marshall Public Schools	9/1/2015 12:20 PM
192	Clarkston	9/1/2015 11:17 AM
193	Clarkston Community Schools	9/1/2015 10:33 AM
194	Clarkston Community Schools	9/1/2015 10:25 AM
195	Clarkston Community Schools	9/1/2015 9:40 AM
196	Clarkston	9/1/2015 9:36 AM
197	Clarkston Community Schools	9/1/2015 9:35 AM
198	Maple Street for the arts	9/1/2015 9:15 AM

199	Kalamazoo Public School District	9/1/2015 9:13 AM
200	Kalamazoo Public Schools	9/1/2015 9:13 AM
201	Kalamazoo Public Schools.	9/1/2015 9:13 AM
202	Kalamazoo Public Schools	9/1/2015 9:12 AM
203	Kalamazoo	9/1/2015 9:12 AM
204	Kalamazoo Public Schools	9/1/2015 9:11 AM
205	Kalamazoo Public Schools	9/1/2015 9:11 AM
206	Kalamazoo Public Schools	9/1/2015 9:11 AM
207	Kresa	9/1/2015 9:10 AM
208	Lenawee ISD	9/1/2015 8:58 AM
209	Oakland ISD	9/1/2015 8:57 AM
210	Clarkston Community Schools	9/1/2015 8:53 AM
211	clarkston community schools	9/1/2015 8:51 AM
212	Romulus Community schools	8/31/2015 6:48 PM
213	St. Patrick Catholic School in the Diocese of Grand Rapids. We are in the Ionia ISD.	8/31/2015 5:26 PM
214	Whiteford Agricultural Schools	8/31/2015 2:26 PM
215	Muskegon City Public Schools	8/31/2015 2:25 PM
216	Barth Elementary, Romulus	8/31/2015 11:26 AM
217	Warren Consolidated Schools	8/31/2015 10:24 AM
218	Northville Public Schools	8/31/2015 7:27 AM
219	Hudsonville Public Schools	8/30/2015 2:46 PM
220	Macomb ISD	8/29/2015 2:37 PM
221	Rochester Community Schools	8/29/2015 10:50 AM
222	Midland Public Schools	8/29/2015 10:42 AM
223	Grandville Public	8/28/2015 6:40 PM
224	AMAESD	8/28/2015 4:48 PM
225	Wayne RESA	8/28/2015 4:19 PM
226	Hillman community schools	8/28/2015 3:45 PM
227	Lapeer County ISD (Almont Community Schools)	8/28/2015 8:49 AM
228	Wayne	8/28/2015 12:15 AM
229	Genesee Intermediate School District	8/27/2015 9:42 PM
230	Woodhaven-Brownstown	8/27/2015 9:40 PM
231	Union City Community Schools	8/27/2015 6:14 PM
232	Lapeer ISD	8/27/2015 2:55 PM
233	Chandler Park Academy	8/27/2015 11:56 AM
234	Kent ISD	8/27/2015 11:20 AM
235	Almont Community Schools	8/27/2015 10:01 AM
236	Cole Academy, Ingham ISD	8/27/2015 9:47 AM
237	Almont	8/27/2015 8:29 AM
238	Almost	8/27/2015 7:47 AM
239	Almont	8/27/2015 7:22 AM

240	Holt Public Schools	8/26/2015 11:01 PM
241	Alma in the Gratiot-Isabella RESA	8/26/2015 8:02 PM
242	Jenison Public Schools	8/26/2015 2:50 PM
243	Gratiot County	8/26/2015 2:41 PM
244	Hartland Consolidated Schools	8/26/2015 1:32 PM
245	Clarkston Schools	8/26/2015 1:01 PM
246	Detroit Public Schools, Wayne RESA	8/26/2015 11:48 AM
247	Clarkston	8/26/2015 11:02 AM
248	Midland Public Schools	8/26/2015 9:51 AM
249	Macomb	8/25/2015 9:33 PM
250	Thornapple Kellogg	8/25/2015 5:51 PM
251	COPESD	8/25/2015 4:10 PM
252	Ingham Intermediate School District	8/25/2015 2:38 PM
253	Wayne RESA	8/25/2015 1:47 PM
254	Wayne RESA	8/25/2015 10:00 AM
255	Ingham ISD	8/25/2015 5:38 AM
256	Hamilton Community Schools	8/24/2015 8:44 PM
257	Plymouth-Canton Community Schools	8/24/2015 8:40 PM
258	Livonia Public Schols	8/24/2015 7:54 PM
259	Ottawa Area ISD	8/24/2015 7:31 PM
260	Howell	8/24/2015 6:59 PM
261	Gratiot Isabella RESD	8/24/2015 4:08 PM
262	Clare Public Schools	8/24/2015 3:23 PM
263	River Valley School District	8/24/2015 3:02 PM
264	St. Clair County RESA	8/24/2015 11:08 AM
265	Grandville Public Schools, Kent ISD	8/24/2015 8:00 AM
266	Dearborn Public Schools	8/23/2015 1:03 PM
267	Wayne-Westland	8/23/2015 12:13 PM
268	Reading Community Schools	8/23/2015 11:42 AM
269	Milan Area Schools	8/22/2015 10:41 PM
270	Freeland Community School DI strict	8/22/2015 1:47 PM
271	Gogebic/Ontonagon ISD	8/22/2015 10:36 AM
272	Van Buren	8/22/2015 10:33 AM
273	Taylor Public Schools	8/22/2015 7:41 AM
274	LESA	8/21/2015 10:16 PM
275	Detroit Public	8/21/2015 4:46 PM
276	Warren Woods	8/21/2015 3:31 PM
277	Saline Area Schools	8/21/2015 11:27 AM
278	Wayne RESA Westwood Community Schools	8/21/2015 10:37 AM
279	Westwood Community Schools	8/21/2015 9:06 AM
280	Westwood Community Schools	8/21/2015 9:06 AM

281	Westwood community schools	8/21/2015 9:06 AM
282	Westwood Community Schools	8/21/2015 9:06 AM
283	Wayne	8/21/2015 9:05 AM
284	Westwood Community Schools	8/21/2015 9:05 AM
285	Westwood Community Schools	8/21/2015 9:05 AM
286	Westwood Community Schools	8/21/2015 9:05 AM
287	Westwood Community Schools	8/21/2015 9:05 AM
288	Westwood community schools	8/21/2015 9:05 AM
289	Wayne Resa Westwood Community Schools	8/21/2015 9:05 AM
290	Westwood	8/21/2015 9:05 AM
291	Westwood Community Schools/ Wayne County RESA	8/21/2015 9:04 AM
292	Westwood	8/21/2015 9:04 AM
293	Westwood Community School District	8/21/2015 9:04 AM
294	Westwood	8/21/2015 9:04 AM
295	Westwood Community Schools	8/21/2015 9:04 AM
296	Westwood Community Schools/Wayne RESA	8/21/2015 9:03 AM
297	Forest Hills Public School	8/21/2015 8:44 AM
298	Dearborn public schools	8/21/2015 8:29 AM
299	Delta Schoolcraft ISD	8/21/2015 7:28 AM
300	St. Johns Public Schools	8/20/2015 10:11 PM
301	Kalamazoo Regional Educational Service Agency	8/20/2015 7:56 PM
302	Monroe Public Schools	8/20/2015 7:33 PM
303	Ludington Area School District	8/20/2015 5:08 PM
304	Grosse Pointe Public Schools	8/20/2015 5:02 PM
305	Three Rivers Community Schools	8/20/2015 4:39 PM
306	Clare-Gladwin RESD	8/20/2015 2:10 PM
307	Mona Shores	8/20/2015 1:46 PM
308	St. Clair County RESA	8/20/2015 1:28 PM
309	Grandville Public & Kent ISD	8/20/2015 1:10 PM
310	Saginaw Valley State University	8/20/2015 12:56 PM
311	Dearborn Public Schools	8/20/2015 12:16 PM
312	Coleman Community Schools	8/20/2015 12:07 PM
313	Farmington Public Schools	8/20/2015 11:55 AM
314	Hamadeh Educational Services	8/20/2015 11:55 AM
315	Parchment Public Schools Kalamazoo RESA	8/20/2015 11:37 AM
316	Bangor Township within Bay-Arenac ISD	8/20/2015 10:54 AM
317	Kent Intermediate	8/20/2015 10:42 AM
318	Oakland Schools	8/20/2015 10:30 AM
319	Niles	8/20/2015 10:17 AM
320	Rochester	8/20/2015 9:39 AM
321	Clare-Gladwin RESD	8/20/2015 9:27 AM

322	New Lothrop Area Public Schools	8/20/2015 9:10 AM
323	Utica	8/20/2015 9:06 AM
324	Michigan Center	8/20/2015 9:01 AM
325	KISD	8/20/2015 9:00 AM
326	Ann Arbor Public Schools	8/20/2015 8:40 AM
327	Mason Consolidated Schools	8/20/2015 8:31 AM
328	Ann Arbor Public Schools	8/20/2015 7:51 AM
329	Diocese of Lansing/ supporting ISD is Genesee ISD	8/20/2015 2:24 AM
330	Eaton Rapids HS	8/19/2015 10:26 PM
331	Bullock Creek	8/19/2015 9:47 PM
332	Utica Community Schools	8/19/2015 9:40 PM
333	Tecumseh Public Schools	8/19/2015 8:39 PM
334	Fitzgerald Public Schools-Warren	8/19/2015 8:14 PM
335	livonia public schools	8/19/2015 7:33 PM
336	Kent Intermediate	8/19/2015 7:25 PM
337	Corunna	8/19/2015 7:19 PM
338	Berkley, Oakland Schools	8/19/2015 7:19 PM
339	Fennville public schools	8/19/2015 7:01 PM
340	Monroe Public Schools	8/19/2015 6:33 PM
341	Lincoln Consolidated Schools	8/19/2015 6:23 PM
342	Dearborn Public Schools	8/19/2015 5:23 PM
343	Plymouth Canton Community Schools	8/19/2015 5:09 PM
344	Garden City Public Schools	8/19/2015 5:08 PM
345	Fowlerville Community Schools	8/19/2015 5:06 PM
346	Michigan State University	8/19/2015 4:35 PM
347	Ann Arbor Public Schools	8/19/2015 4:34 PM
348	Ann Arbor/Washtenaw Intermediate School District	8/19/2015 4:08 PM
349	Northville Public Schools	8/19/2015 3:47 PM
350	Grand Rapids Public Schools	8/19/2015 3:36 PM
351	fdafda	8/19/2015 3:24 PM
352	Ann Arbor Public Schools	8/19/2015 3:23 PM
353	Hastings Area School System	8/19/2015 3:18 PM
354	Birch Run Area Schools - Marshall Greene Middle School	8/19/2015 3:03 PM
355	Gibraltar	8/19/2015 2:59 PM
356	Comstock Public Schools	8/19/2015 2:47 PM
357	Kent ISD	8/19/2015 2:39 PM
358	OAISD	8/19/2015 2:25 PM
359	Farmington	8/19/2015 2:14 PM
360	Wayne resa	8/19/2015 2:07 PM
361	Oakland Co	8/19/2015 2:02 PM
362	Howell Public Schools	8/19/2015 1:37 PM

363	Plymouth-Canton Community Schools	8/19/2015 1:33 PM
364	Alpena, Montmorency, Alcona Educational Service District	8/19/2015 1:20 PM
365	Troy	8/19/2015 1:17 PM
366	Northville Public Schools in the Wayne RESA district	8/19/2015 1:11 PM
367	Alma public schools	8/19/2015 1:10 PM
368	Kent Intermediate School District/Forest Hills Public Schools	8/19/2015 12:57 PM
369	Godfrey-Lee	8/19/2015 12:56 PM
370	Beecher Community Schools- GISD	8/19/2015 12:55 PM
371	TBAISD	8/19/2015 12:53 PM
372	Berrien Springs	8/19/2015 12:46 PM
373	Monroe County ISD	8/19/2015 12:27 PM
374	Wayne RESA	8/19/2015 12:25 PM
375	Essexville- Hampton Public Schools	8/19/2015 12:10 PM
376	Kalamazoo Public Schools	8/19/2015 11:26 AM
377	Houghton-Portage School District	8/19/2015 8:21 AM
378	Constantine Public Schools	8/19/2015 8:18 AM
379	Muskegon area ISD	8/19/2015 5:40 AM
380	KRESA	8/18/2015 10:39 PM
381	Wayland Union Schools	8/18/2015 4:22 PM
382	Akron-Fairgrove Schools	8/18/2015 3:30 PM
383	Ottawa Area Intermediate School District	8/18/2015 1:13 PM
384	Ingham ISD	8/18/2015 11:54 AM
385	Wayne RESA	8/18/2015 11:22 AM
386	independent school	8/18/2015 11:00 AM
387	Grand Rapids Public Schools	8/18/2015 8:32 AM
388	Chippewa Hills	8/18/2015 6:04 AM
389	Ottawa Area ISD	8/17/2015 8:59 PM
390	GISD	8/17/2015 7:44 PM
391	wrgnbwrtgbt	8/17/2015 3:45 PM

Q8 What is your current position?

Answered: 394 Skipped: 406

#	Responses	Date
1	Middle school and high school science teacher	10/8/2015 7:27 PM
2	Elementary sciene teacher	10/8/2015 4:26 PM
3	teacher	10/8/2015 3:14 PM
4	Teacher	10/8/2015 1:18 PM
5	Teacher	10/8/2015 1:02 PM
6	Teacher	10/8/2015 10:27 AM
7	Math/ Science Teacher	10/7/2015 3:08 PM
8	Elementary Principal	10/7/2015 2:16 PM
9	Curriculum Consultant	10/7/2015 1:28 PM
10	Teacher (Chemistry, Biology)	10/7/2015 1:14 PM
11	Kindergarten Teacher	10/6/2015 10:47 PM
12	middle school science teacher	10/6/2015 8:42 PM
13	Teacher	10/6/2015 1:30 PM
14	Director of Education for a convent of religious sisters who are all certified teachers for our apostolate in Catholic education.	10/6/2015 9:57 AM
15	teacher	10/6/2015 9:14 AM
16	Dean of Students (Prek3-2nd grade)	10/5/2015 7:41 PM
17	4th grade teacher	10/5/2015 4:59 PM
18	Science tracher	10/5/2015 4:29 PM
19	science teacher	10/5/2015 4:29 PM
20	3rd grade	10/5/2015 4:09 PM
21	Elementary Science Teacher	10/5/2015 3:47 PM
22	Middle School Science Teacher	10/5/2015 2:35 PM
23	Teacher	10/5/2015 2:12 PM
24	graduate student	10/5/2015 2:05 PM
25	Teacher	10/5/2015 12:21 PM
26	Genesee Area Mathematics and Science Center Director	10/5/2015 9:27 AM
27	Teacher, High School	10/4/2015 10:08 PM
28	8th grade Earth Science	10/4/2015 9:01 PM
29	Science instructor	10/4/2015 3:36 PM
30	Teacher	10/4/2015 10:40 AM
31	Teacher	10/2/2015 11:08 PM
32	5th Grade Teacher	10/2/2015 4:21 PM
33	Dean of Teaching and Learning	10/2/2015 3:15 PM
34	Science teacher	10/1/2015 5:16 PM
35	Elementary Curriculum Supervisor	10/1/2015 4:15 PM

36	K-12 Math/Science Curriculum Director	10/1/2015 3:22 PM
37	2nd grade teacher	10/1/2015 3:04 PM
38	Teacher	10/1/2015 1:18 PM
39	Second grade	10/1/2015 10:03 AM
40	2nd Grade Teacher	10/1/2015 10:01 AM
41	6th grade science teacher	10/1/2015 9:01 AM
42	Physics Teacher	10/1/2015 8:08 AM
43	6th Grade Science Teacher	9/30/2015 9:10 PM
44	Teacher	9/30/2015 7:59 PM
45	Science teacher	9/30/2015 5:00 PM
46	Science Teachers	9/30/2015 2:51 PM
47	Science teacher and department chair	9/30/2015 1:52 PM
48	Education Specialist	9/30/2015 12:25 PM
49	Science Educational Consultant	9/30/2015 11:54 AM
50	Teacher	9/30/2015 11:45 AM
51	teacher	9/30/2015 11:26 AM
52	High School Science Teacher	9/30/2015 11:20 AM
53	Teacher	9/30/2015 10:59 AM
54	4th Grade Science & Social Studies teacher	9/30/2015 10:49 AM
55	teacher	9/30/2015 10:30 AM
56	7th and 8th grade science teacher	9/30/2015 10:29 AM
57	Teacher	9/30/2015 10:05 AM
58	Science Coordinator	9/29/2015 2:15 PM
59	Retired	9/29/2015 12:37 PM
60	Curriculum Development Coordinator, Mi-STAR, Michigan Technological University	9/28/2015 9:48 AM
61	7th and 8th grade science teacher	9/25/2015 12:58 PM
62	8th Grade Earth Science	9/25/2015 12:51 PM
63	6th grade Science Teacher	9/25/2015 12:16 PM
64	Assistant Superintendent	9/25/2015 11:20 AM
65	7-12 science teacher	9/25/2015 6:53 AM
66	5th Grade Teacher	9/24/2015 10:31 PM
67	Job Coach	9/24/2015 7:59 PM
68	Student teacher, Math	9/24/2015 3:15 PM
69	Science Teacher	9/24/2015 11:44 AM
70	High School Physics and Physical Science teacher	9/24/2015 11:29 AM
71	Teacher	9/24/2015 8:18 AM
72	MS Science PLC Leader and 7th grade science teacher	9/24/2015 7:42 AM
73	Teacher	9/23/2015 10:29 PM
74	Elementary Teacher	9/23/2015 9:31 PM
75	8th grade science teacher	9/23/2015 8:32 PM
76	High School Science Teacher	9/23/2015 2:58 PM

77	Middle school science teacher.	9/23/2015 2:42 PM
78	K Teacher	9/23/2015 12:58 PM
79	Science Teacher	9/23/2015 10:39 AM
80	Biology teacher	9/22/2015 10:26 PM
81	High School Biology Teacher	9/22/2015 9:03 PM
82	High School Science Teacher	9/22/2015 7:24 PM
83	First grade teacher	9/22/2015 6:28 PM
84	Teacher	9/22/2015 3:06 PM
85	7th grade science teacher (previous high school Biology, Human Anatomy, Michigan Wildlife teacher)	9/22/2015 1:00 PM
86	7th and 8th grade Science teacher	9/22/2015 12:43 PM
87	science teacher	9/22/2015 10:03 AM
88	5th Grade Instructor	9/22/2015 9:38 AM
89	Teacher, upper el	9/22/2015 5:30 AM
90	IS	9/21/2015 9:49 PM
91	Middle School Teacher -- Mathematics and Permaculture	9/21/2015 8:02 PM
92	Chemistry Instructor, Hazel Park High School	9/21/2015 6:15 PM
93	6th and 7th grade teacher	9/21/2015 4:08 PM
94	Third grade teacher	9/21/2015 3:47 PM
95	High School Science Teacher	9/21/2015 2:33 PM
96	Middle School Science Teacher	9/21/2015 12:29 PM
97	Earth Science Teacher 8th grade	9/21/2015 12:28 PM
98	Instructional Specialist	9/21/2015 10:58 AM
99	Department Chair and Science Teacher	9/21/2015 9:03 AM
100	Instructional Coach	9/21/2015 8:50 AM
101	Seventh grade science	9/21/2015 5:37 AM
102	Principal	9/20/2015 9:57 PM
103	high school teacher	9/20/2015 4:56 PM
104	7th&8th Grade Science and STEM classroom teacher	9/20/2015 3:27 PM
105	Student Teacher	9/20/2015 1:24 PM
106	Teacher	9/19/2015 11:59 PM
107	Chemistry Teacher at Grayling High School	9/19/2015 10:42 PM
108	teacher	9/19/2015 10:26 PM
109	Science Educator, HS and HS Science Dept. Head.	9/19/2015 4:53 PM
110	Teacher	9/19/2015 9:31 AM
111	science professor	9/19/2015 9:24 AM
112	I teach high school science.	9/19/2015 6:09 AM
113	Teacher	9/18/2015 4:23 PM
114	Teacher	9/18/2015 11:36 AM
115	I am a private instructor of piano and voice, as well as a director of children's theater. My contracts take me to five different states and one foreign country. I also prepare educational resources for arts humanities education.	9/18/2015 10:34 AM
116	5th Grade Math and Science Teacher	9/17/2015 9:25 PM

117	Teacher & coach	9/17/2015 7:30 PM
118	Support Staff - Education research, curriculum development, teaching & lab support	9/17/2015 7:22 PM
119	Retired	9/17/2015 5:19 PM
120	Instructor	9/17/2015 4:16 PM
121	Retired elementary teacher (Taught 41 years)	9/17/2015 3:30 PM
122	Retired and active in WEA Retired	9/17/2015 2:49 PM
123	Retired School Teacher 10	9/17/2015 2:27 PM
124	Physics Teacher (retired)	9/17/2015 1:15 PM
125	Teacher second grade	9/17/2015 11:09 AM
126	Science Teacher	9/17/2015 11:05 AM
127	Teacher	9/16/2015 3:06 PM
128	Science Educator working across Michigan	9/16/2015 9:43 AM
129	District Science Specialist	9/14/2015 9:57 AM
130	High school science teacher	9/13/2015 9:13 PM
131	Teacher - Biology, Scientific Research	9/13/2015 8:47 PM
132	Teacher, fifth grade	9/13/2015 7:31 PM
133	middle school science teacher	9/13/2015 3:28 PM
134	Instructional Coach	9/11/2015 3:06 PM
135	Instructional Coach	9/11/2015 9:27 AM
136	7th grade science teacher	9/10/2015 8:36 PM
137	5th Grade Teacher	9/9/2015 10:28 AM
138	Science teacher	9/8/2015 10:00 PM
139	Teacher	9/8/2015 2:03 PM
140	Science Teacher	9/7/2015 1:41 PM
141	Teacher	9/7/2015 9:13 AM
142	Secondary Science Teacher	9/6/2015 7:10 PM
143	Physics teacher	9/4/2015 9:59 PM
144	Science Teacher	9/4/2015 2:51 PM
145	Science Consultant	9/4/2015 9:04 AM
146	Chemistry Teacher	9/4/2015 8:44 AM
147	science teacher	9/4/2015 7:35 AM
148	Science Teacher	9/3/2015 2:53 PM
149	6th grade science	9/3/2015 12:58 PM
150	teacher	9/3/2015 10:26 AM
151	Chemistry teacher	9/3/2015 9:40 AM
152	MS teacher	9/3/2015 9:29 AM
153	Teacher	9/3/2015 9:25 AM
154	fifth grade teacher	9/2/2015 9:34 PM
155	4th grade + 4-5-6 grade science teacher	9/2/2015 4:36 PM
156	High School science teacher	9/2/2015 1:44 PM
157	Teacher	9/2/2015 1:18 PM

158	Teacher K-12 Science Department Chair High School Science Department chair	9/2/2015 10:50 AM
159	7th Grade Science	9/2/2015 9:54 AM
160	Teacher	9/2/2015 8:57 AM
161	Biology Teacher	9/2/2015 8:56 AM
162	Chemistry Teacher	9/2/2015 8:54 AM
163	Physical Science and Applied Physics Teacher	9/2/2015 8:52 AM
164	High School Science Teacher	9/2/2015 8:52 AM
165	7th Grade Science Teacher	9/1/2015 9:03 PM
166	Science Teacher	9/1/2015 7:55 PM
167	Middle school science instructor	9/1/2015 6:48 PM
168	Science department head 6th grade science teacher	9/1/2015 6:16 PM
169	Associate Superintendent	9/1/2015 5:02 PM
170	Principal	9/1/2015 4:23 PM
171	Chemistry Teacher	9/1/2015 4:03 PM
172	Grade 6 science teacher.	9/1/2015 2:43 PM
173	Science Teacher	9/1/2015 2:42 PM
174	Science Teacher	9/1/2015 2:41 PM
175	Teacher	9/1/2015 2:41 PM
176	Physics Teacher (grades 9-12)	9/1/2015 2:40 PM
177	Chemistry Teacher	9/1/2015 2:40 PM
178	Biology teacher	9/1/2015 2:40 PM
179	secondary science teacher	9/1/2015 2:40 PM
180	6th grade science	9/1/2015 2:40 PM
181	Science Teacher (9-12)	9/1/2015 2:39 PM
182	Secondary Science Teacher	9/1/2015 2:39 PM
183	Teacher	9/1/2015 2:39 PM
184	Science Teacher	9/1/2015 2:39 PM
185	Science Teacher	9/1/2015 2:38 PM
186	Teacher	9/1/2015 2:26 PM
187	teacher	9/1/2015 2:15 PM
188	Teacher	9/1/2015 1:44 PM
189	Science Teacher	9/1/2015 1:38 PM
190	teacher-middle school	9/1/2015 1:29 PM
191	Middle School Science Teacher	9/1/2015 1:26 PM
192	6th grade Science teacher	9/1/2015 1:26 PM
193	8th Grade Science Teacher	9/1/2015 1:25 PM
194	Retired 5th grade teacher	9/1/2015 12:20 PM
195	Teacher	9/1/2015 11:17 AM
196	Biology Teacher	9/1/2015 10:33 AM
197	Biology Teacher	9/1/2015 10:25 AM
198	Teacher	9/1/2015 9:40 AM

199	Teacher	9/1/2015 9:36 AM
200	7th grade Science teacher	9/1/2015 9:35 AM
201	ESL Teacher/ ELL science	9/1/2015 9:15 AM
202	Middle School Science Teacher	9/1/2015 9:13 AM
203	7th Grade Science	9/1/2015 9:13 AM
204	Science teacher	9/1/2015 9:13 AM
205	Science Teacher	9/1/2015 9:12 AM
206	middle school teacher	9/1/2015 9:12 AM
207	middle school science	9/1/2015 9:11 AM
208	6th/7th Science Teacher	9/1/2015 9:11 AM
209	teacher	9/1/2015 9:11 AM
210	science teacher	9/1/2015 9:10 AM
211	Director, Curriculum & Consultation, STEM Services/PLTW	9/1/2015 8:58 AM
212	Science teacher at high school level	9/1/2015 8:57 AM
213	8th grade science	9/1/2015 8:53 AM
214	teacher	9/1/2015 8:51 AM
215	Science teacher	8/31/2015 6:48 PM
216	Teacher of Natural Sciences	8/31/2015 5:26 PM
217	Teacher	8/31/2015 2:26 PM
218	Teacher	8/31/2015 2:25 PM
219	4/5 Multi-age Classroom Teacher	8/31/2015 11:26 AM
220	elementary teacher	8/31/2015 10:24 AM
221	Chemistry Teacher	8/31/2015 7:27 AM
222	Science teacher and department chair	8/30/2015 2:46 PM
223	Teacher	8/29/2015 2:37 PM
224	Physics and AP Physics teacher and Adjunct faculty at Macomb Community College	8/29/2015 10:50 AM
225	Middle and HIgh school teacher	8/29/2015 10:42 AM
226	Teacher	8/28/2015 6:40 PM
227	Teacher 2nd	8/28/2015 4:48 PM
228	Science Teacher	8/28/2015 4:19 PM
229	1st grade teacher	8/28/2015 3:45 PM
230	Principal of K-4 building	8/28/2015 8:49 AM
231	4th grade teacher	8/28/2015 12:15 AM
232	High School Science Teacher	8/27/2015 9:42 PM
233	Grade 3 teacher	8/27/2015 9:40 PM
234	Seventh and Eighth grade science	8/27/2015 6:14 PM
235	First Grade Teacher	8/27/2015 2:55 PM
236	High school science teacher	8/27/2015 11:56 AM
237	Science Teacher	8/27/2015 11:20 AM
238	Teacher	8/27/2015 10:01 AM
239	5th grade teacher	8/27/2015 9:47 AM

240	teacher/K	8/27/2015 8:29 AM
241	Teacher	8/27/2015 7:47 AM
242	1st grade teacher	8/27/2015 7:22 AM
243	Science & Math teacher	8/26/2015 11:01 PM
244	4th grade teacher	8/26/2015 8:02 PM
245	Teacher	8/26/2015 2:50 PM
246	4th grade teacher	8/26/2015 2:41 PM
247	Teacher	8/26/2015 1:32 PM
248	Administrator	8/26/2015 1:01 PM
249	Kindergarten Classroom Teacher	8/26/2015 11:48 AM
250	Subject area coordinator, teacher	8/26/2015 11:02 AM
251	Elementary Specialist for Curriculum and Instruction	8/26/2015 9:51 AM
252	Curriculum Consultant	8/25/2015 9:33 PM
253	High school biology teacher	8/25/2015 5:51 PM
254	Middle School Science Teacher	8/25/2015 4:10 PM
255	Teacher	8/25/2015 2:42 PM
256	STEM Consultant	8/25/2015 2:38 PM
257	Elem science teacher	8/25/2015 1:47 PM
258	Classroom teacher	8/25/2015 10:00 AM
259	Science Teacher	8/25/2015 5:38 AM
260	Educator	8/24/2015 8:44 PM
261	Stem teacher	8/24/2015 8:40 PM
262	Science Teacher	8/24/2015 7:54 PM
263	Teacher	8/24/2015 7:31 PM
264	Science Teacher	8/24/2015 6:59 PM
265	4th grade teacher	8/24/2015 4:08 PM
266	Science Teacher	8/24/2015 3:23 PM
267	Elementary Teacher	8/24/2015 3:02 PM
268	Science grade 7 teacher	8/24/2015 11:08 AM
269	5th grade teacher, Cummings Elementary	8/24/2015 8:00 AM
270	Teacher	8/23/2015 1:03 PM
271	9-12 Teacher in Science	8/23/2015 12:13 PM
272	Middle School Science Teacher	8/23/2015 11:42 AM
273	Principal	8/22/2015 10:41 PM
274	Teacher	8/22/2015 1:47 PM
275	Middle school teacher	8/22/2015 10:36 AM
276	Teacher	8/22/2015 10:33 AM
277	Self-contained Special Education Teacher	8/22/2015 7:41 AM
278	Math/Science middle school teacher	8/21/2015 10:16 PM
279	Science Teacher	8/21/2015 4:46 PM
280	Science Teacher	8/21/2015 3:31 PM

281	7th Grade Science	8/21/2015 11:27 AM
282	4th Grade Teacher	8/21/2015 10:37 AM
283	Special Ed. Teacher	8/21/2015 9:06 AM
284	Teacher	8/21/2015 9:06 AM
285	1st-6th special ed	8/21/2015 9:06 AM
286	5th Grade Teacher	8/21/2015 9:06 AM
287	science teacher high school	8/21/2015 9:05 AM
288	6th Grade General Ed Teacher- all subjects	8/21/2015 9:05 AM
289	Teacher	8/21/2015 9:05 AM
290	3rd Grade Teacher	8/21/2015 9:05 AM
291	Fifth grade teacher	8/21/2015 9:05 AM
292	Teacher	8/21/2015 9:05 AM
293	1st grade teacher	8/21/2015 9:05 AM
294	3rd grade teacher	8/21/2015 9:05 AM
295	teacher	8/21/2015 9:04 AM
296	Teacher	8/21/2015 9:04 AM
297	Elementary School teacher	8/21/2015 9:04 AM
298	Science Teacher	8/21/2015 9:04 AM
299	Elementary Teacher	8/21/2015 9:04 AM
300	Teacher	8/21/2015 9:03 AM
301	High school chemistry and physics teacher	8/21/2015 8:44 AM
302	1st grade teacher	8/21/2015 8:29 AM
303	Substitute science teacher	8/21/2015 7:28 AM
304	Teacher	8/20/2015 10:11 PM
305	Teacher	8/20/2015 7:56 PM
306	Biology teacher	8/20/2015 7:33 PM
307	Teacher	8/20/2015 5:08 PM
308	Teacher	8/20/2015 5:02 PM
309	First grade teacher	8/20/2015 4:39 PM
310	Teacher	8/20/2015 2:10 PM
311	High School Teacher & Science Department Chair	8/20/2015 1:46 PM
312	Teacher	8/20/2015 1:28 PM
313	Teacher	8/20/2015 1:10 PM
314	Project coordinator for math and science grants	8/20/2015 12:56 PM
315	Teacher	8/20/2015 12:16 PM
316	4Th grade teacher	8/20/2015 12:07 PM
317	Chemistry Teacher	8/20/2015 11:55 AM
318	Biology Teacher	8/20/2015 11:55 AM
319	High School Biology Teacher	8/20/2015 11:37 AM
320	4th grade teacher	8/20/2015 10:54 AM
321	Teacher	8/20/2015 10:42 AM

322	Science Teacher	8/20/2015 10:30 AM
323	sixth grade math/science teacher	8/20/2015 10:17 AM
324	Chemistry teacher. Physical science teacher	8/20/2015 9:39 AM
325	Data Coordinator	8/20/2015 9:27 AM
326	Science Teacher	8/20/2015 9:10 AM
327	Teacher	8/20/2015 9:06 AM
328	High School Chemistry Teacher	8/20/2015 9:01 AM
329	Teacher	8/20/2015 9:00 AM
330	Teacher	8/20/2015 8:40 AM
331	Science Teacher	8/20/2015 8:31 AM
332	6/7 science teacher	8/20/2015 7:51 AM
333	Science teacher, 5th-6th Grade Geography Teacher, 6th Grade	8/20/2015 2:24 AM
334	Teacher	8/19/2015 10:26 PM
335	Teacher	8/19/2015 9:47 PM
336	4th grade teachers	8/19/2015 9:40 PM
337	Science Teacher	8/19/2015 8:39 PM
338	4th Grade Teacher	8/19/2015 8:14 PM
339	teacher	8/19/2015 7:33 PM
340	Teacher	8/19/2015 7:25 PM
341	teacher	8/19/2015 7:19 PM
342	Middle School Science & Math Teacher; Curriculum & Instructional Support Specialist for Math & Science	8/19/2015 7:19 PM
343	Science teacher - Fennville High School	8/19/2015 7:01 PM
344	After 9 years of teaching high school science, I am now transitioning to middle school administration.	8/19/2015 6:33 PM
345	math teacher, but I taught high school science for 15 years (chemistry, AP Chemistry, and physical science)	8/19/2015 6:23 PM
346	Chemistry Teacher	8/19/2015 5:23 PM
347	Teacher	8/19/2015 5:09 PM
348	Science teacher	8/19/2015 5:08 PM
349	K-2 Science Teacher	8/19/2015 5:06 PM
350	Graduate research and teaching assistant (former high school biology teacher)	8/19/2015 4:35 PM
351	Teacher	8/19/2015 4:34 PM
352	Science Department Chair	8/19/2015 4:08 PM
353	Teacher	8/19/2015 3:47 PM
354	Teacher	8/19/2015 3:36 PM
355	fdafa	8/19/2015 3:24 PM
356	Teacher	8/19/2015 3:23 PM
357	High School Science Teacher	8/19/2015 3:18 PM
358	8th Grade Science Teacher	8/19/2015 3:03 PM
359	High School Teacher	8/19/2015 2:59 PM
360	Teacher-First Grade	8/19/2015 2:47 PM
361	Principal	8/19/2015 2:39 PM
362	teacher	8/19/2015 2:25 PM

363	Teacher	8/19/2015 2:14 PM
364	6th grade science teacher	8/19/2015 2:07 PM
365	6th and 7th grade and STEM science teacher	8/19/2015 1:37 PM
366	science teacher	8/19/2015 1:33 PM
367	Science Teacher, Grade 8	8/19/2015 1:20 PM
368	Teacher	8/19/2015 1:17 PM
369	science and math teacher	8/19/2015 1:11 PM
370	Bio and human a&p teacher highschool	8/19/2015 1:10 PM
371	I am currently a fourth grade teacher.	8/19/2015 12:57 PM
372	Teacher	8/19/2015 12:56 PM
373	6-8 Science	8/19/2015 12:55 PM
374	6th grade science and math teacher	8/19/2015 12:53 PM
375	Teacher-Menominee Virtual Learning Center	8/19/2015 12:46 PM
376	Coordinator of Research, Evaluation, and Assessment	8/19/2015 12:27 PM
377	High School Science TEacher	8/19/2015 12:25 PM
378	6/7 Grade Science Teacher	8/19/2015 12:10 PM
379	Coordinator for Math and Science Curriculum and Professional Development	8/19/2015 11:26 AM
380	Science Dept. Chair Science Teacher	8/19/2015 8:21 AM
381	middle school science teacher	8/19/2015 8:18 AM
382	Middle school teacher	8/19/2015 5:40 AM
383	4th grade teacher	8/18/2015 10:39 PM
384	Teacher	8/18/2015 4:22 PM
385	4th/5th grade math/science teacher	8/18/2015 3:30 PM
386	Science/School Improvement Consultant	8/18/2015 1:13 PM
387	classroom teacher	8/18/2015 11:54 AM
388	Science Consultant	8/18/2015 11:22 AM
389	6th grade science teacher	8/18/2015 11:00 AM
390	high school science teacher	8/18/2015 8:32 AM
391	Teacher	8/18/2015 6:04 AM
392	Teacher	8/17/2015 8:59 PM
393	Teacher	8/17/2015 7:44 PM
394	wrtbwrtb	8/17/2015 3:45 PM

Q9 Please specify your professional organization affiliation.

Answered: 257 Skipped: 543

#	Responses	Date
1	MEA, NEA, White Cloud EA	10/8/2015 7:27 PM
2	MEA	10/8/2015 3:14 PM
3	MEA member, MSTA member	10/8/2015 1:18 PM
4	MEA	10/7/2015 3:08 PM
5	Member of many professional organizations: MRA/ILA/MCTE/NCTE/MMP; MSTA/NSTA/CSSS/NARAT/MSELA/NSELA; MCTM; MCSS/NCSS; MASCD/ASCD	10/7/2015 1:28 PM
6	None	10/7/2015 1:14 PM
7	L'Anse Area Schools	10/6/2015 8:42 PM
8	n/a	10/6/2015 1:30 PM
9	NA	10/5/2015 4:59 PM
10	AAPT, MSTA	10/5/2015 4:29 PM
11	Rochester Community Schools	10/5/2015 4:29 PM
12	MEA NEA	10/5/2015 4:09 PM
13	MSTA	10/5/2015 3:47 PM
14	National Science Teachers Association, Michigan Science Teachers Association, ASCD, and MACUL. Formerly a member of the Southern Nevada Science Teachers Association.	10/5/2015 2:35 PM
15	NSTA ASCD	10/5/2015 2:12 PM
16	MSTA, NSTA, ACS	10/5/2015 2:05 PM
17	Michigan Mathematics and Science Centers Network St. Clair Hub of the Michigan STEM Partnership Michigan Science Teachers Association National Science Teachers Association	10/5/2015 9:27 AM
18	NSTA, MSTA	10/4/2015 10:08 PM
19	MSTA	10/4/2015 9:01 PM
20	Teacher 1st grade	10/4/2015 10:40 AM
21	NEA/MEA/PCEA; NSTA/MSTA/MDSTA; NESTA/MESTA I am a teacher.	10/1/2015 5:16 PM
22	NSTA, MSTA, NABT, AIBS	10/1/2015 3:22 PM
23	Not sure what this means	10/1/2015 1:18 PM
24	Building Science Chair Person	10/1/2015 10:03 AM
25	NSTA	10/1/2015 9:01 AM
26	MSTA, MACUL, MEA MAMSE	9/30/2015 9:10 PM
27	MCTM, MEA, MSTA	9/30/2015 7:59 PM
28	National Earth Science Teachers Association	9/30/2015 2:51 PM
29	MSTA,NABT,MEA,NEA	9/30/2015 1:52 PM
30	Michigan Science Teachers Association	9/30/2015 12:25 PM
31	MSTA, NSTA	9/30/2015 11:54 AM
32	Newaygo Public School	9/30/2015 11:45 AM
33	MSTA	9/30/2015 11:20 AM

34	N/A	9/30/2015 10:59 AM
35	Public school science teacher, Parent of public school children, concerned citizen	9/30/2015 10:49 AM
36	none	9/30/2015 10:30 AM
37	Michigan Science Teachers Association (MSTA) Elementary Director, Board of Directors.	9/30/2015 10:05 AM
38	Walled Lake Schools, MSTA, NSTA, ASCD	9/29/2015 2:15 PM
39	Kalamazoo Area Michigan Retired Teachers	9/29/2015 12:37 PM
40	MSTA NSTA Geological Society of America	9/28/2015 9:48 AM
41	NGSS	9/25/2015 12:16 PM
42	I work for Kenowa Hills Public Schools (Kent County). Our district is a member of the Re-Inventing Schools Coalition (Marzano Research Laboratory) which aims to help transform education systems and processes to those that align with personal mastery/competency-based education. I am also a board member on the Michigan Association of State and Federal Program Specialists (MASFPS). Furthermore, I am on the leadership team for our county's learning collaborative (which includes curriculum administrators in Kent County).	9/25/2015 11:20 AM
43	N/A	9/24/2015 10:31 PM
44	None	9/24/2015 7:59 PM
45	Wayne State University	9/24/2015 3:15 PM
46	MSTA and NSTA	9/24/2015 11:29 AM
47	N/A	9/24/2015 7:42 AM
48	Council For Exceptional Children	9/23/2015 10:29 PM
49	NEA	9/23/2015 2:58 PM
50	N/A	9/23/2015 2:42 PM
51	NSTA MSTA MEA NEA	9/23/2015 10:39 AM
52	MSTA	9/22/2015 10:26 PM
53	Manistee Teachers Association, MSTA	9/22/2015 7:24 PM
54	MEA	9/22/2015 3:06 PM
55	MSTA (Michigan Science Teacher's Association)	9/22/2015 1:00 PM
56	REA, MEA, MSTA	9/22/2015 9:38 AM
57	many	9/22/2015 5:30 AM
58	MI Association of Math Teachers MI Association of Science Teachers MI Association of Social Studies Teachers	9/21/2015 8:02 PM
59	Hazel Park Education Association, National Board Certification	9/21/2015 6:15 PM
60	none	9/21/2015 3:47 PM
61	NA	9/21/2015 2:33 PM
62	MESTA, MSTA	9/21/2015 12:29 PM
63	Michigan Earth Science Teacher Association (MESTA)	9/21/2015 12:28 PM
64	National Science Teachers Association	9/21/2015 8:50 AM
65	Msta	9/21/2015 5:37 AM
66	public school employee	9/20/2015 4:56 PM
67	MSTA	9/19/2015 10:26 PM
68	Hastings Area Schools	9/19/2015 4:53 PM
69	The Network of Michigan Educators	9/19/2015 9:31 AM
70	MSTA	9/19/2015 9:24 AM

71	Member of NSTA. I will be joining AAPT soon.	9/19/2015 6:09 AM
72	National Science Teacher's Assoc.	9/18/2015 4:23 PM
73	CEA	9/18/2015 11:36 AM
74	National Education Association, Massachusetts Teachers Association, National Association of Music in Our Schools, American Orff-Schulwerk Association, American Choral Directors Association, Massachusetts Music Educators Association, and the Michigan Music Educators Association	9/18/2015 10:34 AM
75	I am a member of the National Science Teachers Association	9/17/2015 9:25 PM
76	MEA NEA MET(English teachers)	9/17/2015 7:30 PM
77	University of Michigan - Materials Science & Engineering	9/17/2015 7:22 PM
78	SOMEA	9/17/2015 5:19 PM
79	N/A	9/17/2015 4:16 PM
80	none	9/17/2015 3:30 PM
81	Lifetime member of Michigan Education Association-Retired, as well as a member of Warren Education Association-Retired.	9/17/2015 2:49 PM
82	MEA, NSTA,	9/17/2015 1:15 PM
83	Michigan Science Teachers Association	9/17/2015 11:05 AM
84	NSTA MSU Extension and 4-H	9/16/2015 9:43 AM
85	MSTA member	9/14/2015 9:57 AM
86	MSTA ATA	9/13/2015 9:13 PM
87	Teacher	9/13/2015 8:47 PM
88	none	9/13/2015 7:31 PM
89	MESTA MICTA MSTA AEA	9/13/2015 3:28 PM
90	MSTA, NSTA	9/11/2015 3:06 PM
91	MACUL, MRA, GVSU Instructor,	9/11/2015 9:27 AM
92	MSTA & NSTA	9/10/2015 8:36 PM
93	HEA, MEA, NEA	9/9/2015 10:28 AM
94	MEA	9/8/2015 10:00 PM
95	Michigan Science Teachers Association.	9/7/2015 1:41 PM
96	NEA, MEA, NWEA	9/7/2015 9:13 AM
97	Public School Teacher	9/6/2015 7:10 PM
98	Gladwin Community Schools	9/4/2015 2:51 PM
99	Kent Intermediate School District	9/4/2015 9:04 AM
100	BEA	9/4/2015 8:44 AM
101	ASM Materials Information Society AFT, DFT	9/4/2015 7:35 AM
102	? MSTA ?	9/3/2015 9:40 AM
103	None	9/3/2015 9:25 AM
104	I'm not certain what this means.	9/2/2015 4:36 PM
105	MSTA	9/2/2015 1:44 PM
106	American association of physics teachers	9/2/2015 1:18 PM
107	N/A	9/2/2015 9:54 AM
108	MSTA	9/2/2015 8:57 AM
109	MSTA	9/2/2015 8:54 AM

110	MSTA	9/2/2015 8:52 AM
111	MSTA	9/2/2015 8:52 AM
112	MSTA	9/1/2015 9:03 PM
113	MSTA	9/1/2015 7:55 PM
114	Pennfield Schools	9/1/2015 6:48 PM
115	Msta, mdsta, dactm....	9/1/2015 6:16 PM
116	NA	9/1/2015 4:23 PM
117	MEA, AMTA, MSTA	9/1/2015 4:03 PM
118	I have been an MSTA member in the past. My membership is not current this year.	9/1/2015 2:43 PM
119	Phoenix High School	9/1/2015 2:42 PM
120	Kalamazoo Public Schools	9/1/2015 2:41 PM
121	Kalamazoo Education Association and American Association of Physics Teachers	9/1/2015 2:40 PM
122	Woodrow Wilson Fellow National Science Teachers Association	9/1/2015 2:40 PM
123	Kalamazoo Education Association	9/1/2015 2:39 PM
124	KEA	9/1/2015 2:39 PM
125	NEA KEA MSTA ACS	9/1/2015 2:39 PM
126	MSTA	9/1/2015 2:38 PM
127	MSTA	9/1/2015 1:38 PM
128	middle school	9/1/2015 1:29 PM
129	NSTA	9/1/2015 1:26 PM
130	MEA, MACUL	9/1/2015 1:26 PM
131	Hudsonville Education Association	9/1/2015 1:25 PM
132	(While working) MSTA, NSTA, NCTM,	9/1/2015 12:20 PM
133	Teacher	9/1/2015 11:17 AM
134	MDSTA	9/1/2015 10:25 AM
135	MSTA	9/1/2015 9:40 AM
136	MSTA	9/1/2015 9:36 AM
137	Kalamazoo Public Schools	9/1/2015 9:15 AM
138	MSTA	9/1/2015 9:13 AM
139	KPS	9/1/2015 9:12 AM
140	Kalamazoo Education Association	9/1/2015 9:11 AM
141	Kalamazoo Public Schools	9/1/2015 9:11 AM
142	MSTA	9/1/2015 8:58 AM
143	science	9/1/2015 8:51 AM
144	NSTA, MSTA	8/31/2015 6:48 PM
145	MSTA	8/31/2015 5:26 PM
146	MSTA & NSTA	8/30/2015 2:46 PM
147	NSTA	8/29/2015 2:37 PM
148	AAPT MSTA NSTA MEA	8/29/2015 10:50 AM
149	MSTA, NSTA	8/29/2015 10:42 AM
150	AFT	8/28/2015 4:19 PM

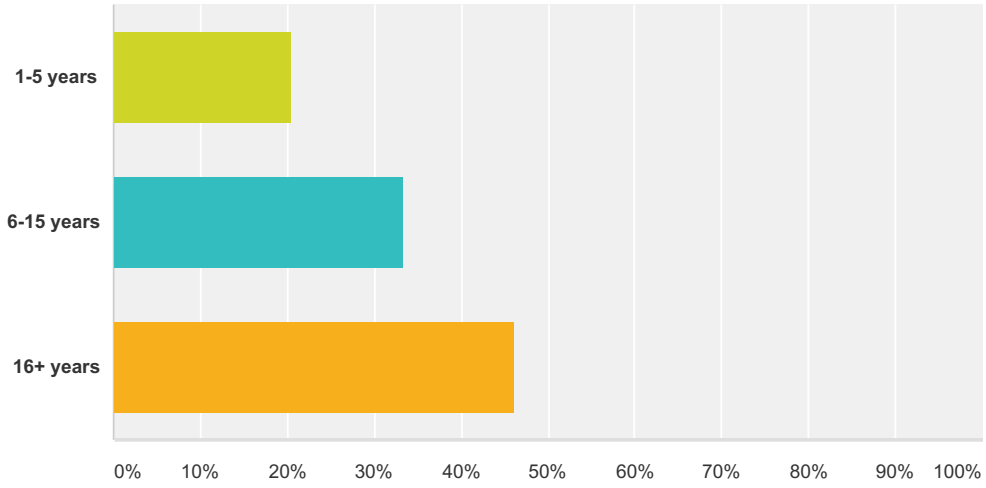
151	NSTA, SCEA, MEA, NABT	8/27/2015 9:42 PM
152	No Science professional affiliations	8/27/2015 9:40 PM
153	Employed as current teacher, member of Michigan Science Teachers Association.	8/27/2015 6:14 PM
154	MEA	8/27/2015 2:55 PM
155	MSTA, NSTA, MAEOE	8/27/2015 11:56 AM
156	MEA	8/27/2015 7:47 AM
157	MACUL	8/27/2015 7:22 AM
158	MEA	8/26/2015 8:02 PM
159	School	8/26/2015 2:41 PM
160	NSTA MSTA	8/26/2015 1:32 PM
161	Clarkston Schools	8/26/2015 1:01 PM
162	DFT	8/26/2015 11:48 AM
163	Michigan Administrators	8/26/2015 9:51 AM
164	MSTA, NSTA, MRA, ILA, MCTM, ASCD, MASCD	8/25/2015 9:33 PM
165	Past member of NSTA, MSTA, and MESTA (MI Earth Science)	8/25/2015 4:10 PM
166	NSTA, MSTA	8/25/2015 2:38 PM
167	MEA	8/25/2015 1:47 PM
168	MSTA	8/25/2015 5:38 AM
169	MEA	8/24/2015 6:59 PM
170	MSTA	8/24/2015 3:23 PM
171	NEA member	8/24/2015 3:02 PM
172	ECSD	8/24/2015 11:08 AM
173	Staff member at Cummings, formerly 3rd grade teacher at another school in the district	8/24/2015 8:00 AM
174	MSTA member	8/23/2015 1:03 PM
175	None	8/23/2015 11:42 AM
176	MEMSPA	8/22/2015 10:41 PM
177	NEW/MEA NSTA	8/22/2015 10:36 AM
178	MEA	8/22/2015 10:33 AM
179	AFT NRA BATS	8/22/2015 7:41 AM
180	NSTA member	8/21/2015 10:16 PM
181	DFT	8/21/2015 4:46 PM
182	Warren Woods Middle School	8/21/2015 3:31 PM
183	Public School System	8/21/2015 10:37 AM
184	Michigan Sci Association MEA	8/21/2015 9:06 AM
185	MEA	8/21/2015 9:06 AM
186	MSTA, NSTA	8/21/2015 9:05 AM
187	none	8/21/2015 9:05 AM
188	None	8/21/2015 9:05 AM
189	MEA, NEA	8/21/2015 9:05 AM
190	MEA	8/21/2015 9:05 AM
191	MEA	8/21/2015 9:05 AM

192	MEA	8/21/2015 9:04 AM
193	American Library Association,	8/21/2015 9:04 AM
194	MEA	8/21/2015 9:04 AM
195	NSTA MSTA AMTA	8/21/2015 8:44 AM
196	none	8/21/2015 7:28 AM
197	MSTA, MEA	8/20/2015 7:56 PM
198	None	8/20/2015 5:02 PM
199	NSTA, NESTA, MSTA, MESTA	8/20/2015 2:10 PM
200	MSTA	8/20/2015 1:28 PM
201	FEA/MEA	8/20/2015 11:55 AM
202	NSTA	8/20/2015 11:55 AM
203	MSTA NSTA	8/20/2015 11:37 AM
204	MEA	8/20/2015 10:30 AM
205	Modeling Chemistry	8/20/2015 9:39 AM
206	Michigan Afterschool Association Michigan Science Teacher Association	8/20/2015 9:27 AM
207	MESTA MSTA	8/20/2015 9:10 AM
208	Elementary teacher	8/20/2015 9:06 AM
209	MSTA NSTA	8/20/2015 9:01 AM
210	NSTA	8/20/2015 8:31 AM
211	NSTA, MSTA	8/20/2015 7:51 AM
212	MSTA MESTA MACUL DKG	8/20/2015 2:24 AM
213	MEA	8/19/2015 9:40 PM
214	NSTA/MSTA	8/19/2015 8:39 PM
215	Amer. Chemical Society; Amer. Assoc. of Chem. Teachers; Detroit Metro Physics Teachers; SEMCTO; MEA MSTA for 20 years (but not currently)	8/19/2015 7:33 PM
216	MSTA	8/19/2015 7:25 PM
217	MEA	8/19/2015 7:19 PM
218	American Chemical Society Michigan Science Teachers Association	8/19/2015 7:01 PM
219	Monroe public schools	8/19/2015 6:33 PM
220	Americal Chemical Society, MDSTA, DACTM, NSTA, MEA, NEA	8/19/2015 6:23 PM
221	Dearborn Federation of Teachers	8/19/2015 5:23 PM
222	MSTA AMTA SEMCTO AACT	8/19/2015 5:09 PM
223	GCEA	8/19/2015 5:08 PM
224	H.T. Smith Elementary	8/19/2015 5:06 PM
225	Co-director of Michigan Association of Biology Teachers (MABT) Member of: Michigan Science Teachers Association (MSTA), National Association for Research in Science Teaching (NARST), and National Association of Biology Teachers (NABT)	8/19/2015 4:35 PM
226	Skyline High School, Ann Arbor Michigan	8/19/2015 4:08 PM
227	AACT	8/19/2015 3:47 PM
228	fadfdafda	8/19/2015 3:24 PM
229	National Science Teachers Association	8/19/2015 3:23 PM
230	MSTA	8/19/2015 3:18 PM

231	MSTA NSTA MEA NEA	8/19/2015 3:03 PM
232	MSTA SEMCTA	8/19/2015 2:59 PM
233	Educator	8/19/2015 2:07 PM
234	MEA and NEA	8/19/2015 1:37 PM
235	NESTA, NSTA	8/19/2015 1:33 PM
236	MEA, AEA	8/19/2015 1:20 PM
237	NCTM, MCTM, ISTE, CSTA, MiCSTA, MACU	8/19/2015 1:17 PM
238	MSTA	8/19/2015 1:11 PM
239	BEA	8/19/2015 12:55 PM
240	none	8/19/2015 12:53 PM
241	Success Virtual Learning Centers	8/19/2015 12:46 PM
242	MCTM - president elect of Michigan Council of Teachers of Mathematics Also a member of NCTM, NCSM, ASCD, MI-ASCD	8/19/2015 12:27 PM
243	MDSTA	8/19/2015 12:25 PM
244	NSTA, MSTA, NCTM, MCTM	8/19/2015 11:26 AM
245	MSTA, NSTA, MEA, NAAEE, MAEOE	8/19/2015 8:21 AM
246	msta, nsta, mea	8/19/2015 8:18 AM
247	MSTA NSTA	8/19/2015 5:40 AM
248	MEA	8/18/2015 10:39 PM
249	National Science Teacher's Association	8/18/2015 3:30 PM
250	Michigan Science Professional Learning Network MASSP NASSP NSTA	8/18/2015 1:13 PM
251	Williamston Community Schools Michigan Science Teachers Association National Science Teachers Association Preschool/Elementary Committee-NSTA Past President Society of Elementary Presidential Awardees	8/18/2015 11:54 AM
252	MSTA and NSTA	8/18/2015 11:22 AM
253	National Science Teachers Association	8/18/2015 11:00 AM
254	GREA, MEA, NEA	8/18/2015 8:32 AM
255	NSTA	8/17/2015 8:59 PM
256	Teacher	8/17/2015 7:44 PM
257	wqertbwrtb	8/17/2015 3:45 PM

Q10 If employed in one of the above professional positions, then how long have you been in your current position?

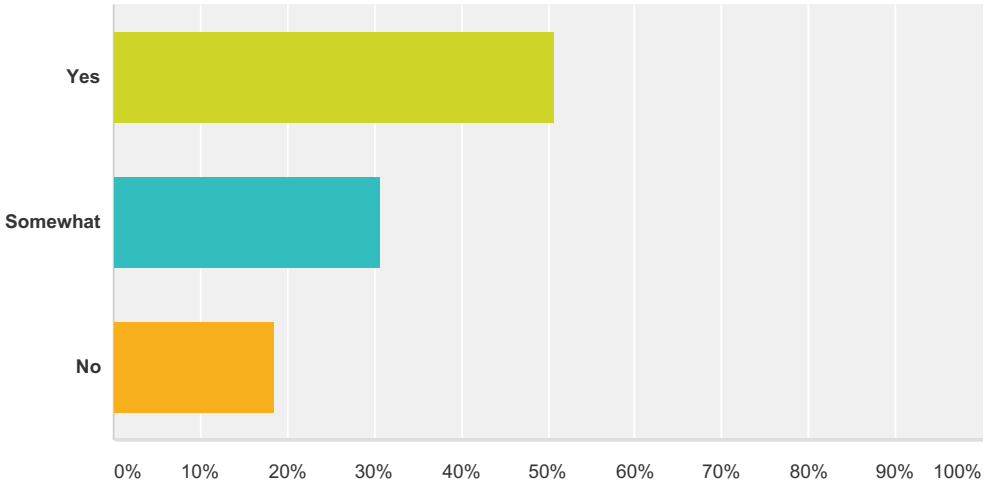
Answered: 380 Skipped: 420



Answer Choices	Responses	
1-5 years	**20.53%**	78
6-15 years	**33.42%**	127
16+ years	**46.05%**	175
Total		**380**

Q11 Are you familiar with the structure and format of the Framework for K-12 Science Education?

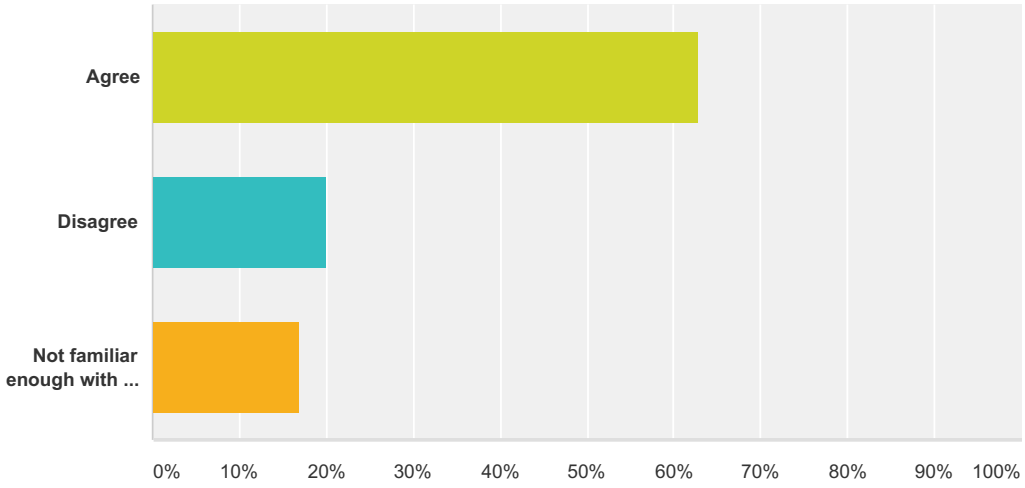
Answered: 740 Skipped: 60



Answer Choices	Responses	
Yes	**50.68%**	375
Somewhat	**30.68%**	227
No	**18.65%**	138
Total		**740**

Q12 Overall, the Framework for K-12 Science Education represents a clear and coherent vision of the discipline.

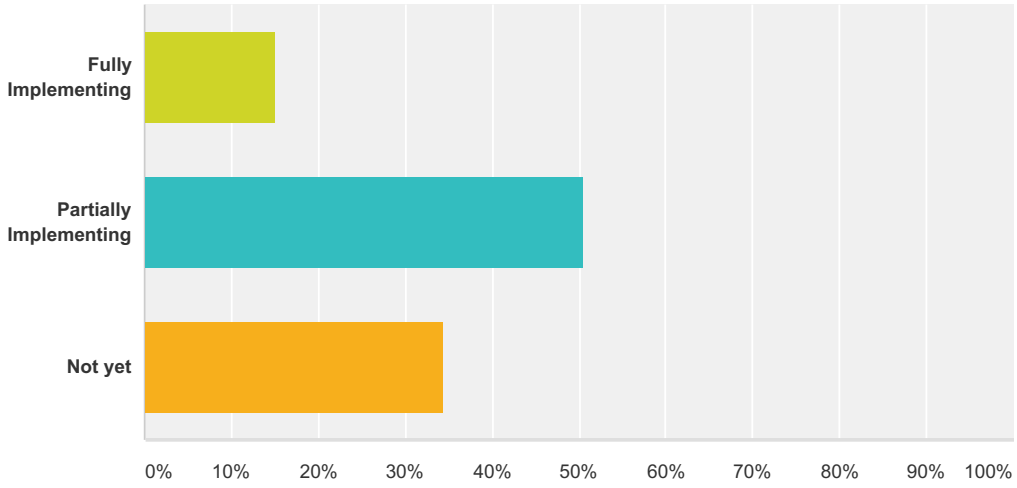
Answered: 577 Skipped: 223



Answer Choices	Responses	
Agree	**62.91%**	363
Disagree	**20.10%**	116
Not familiar enough with the standards and/or science to answer.	**16.98%**	98
Total		**577**

Q13 Are you already implementing changes based on the the Framework for K-12 Science Education?

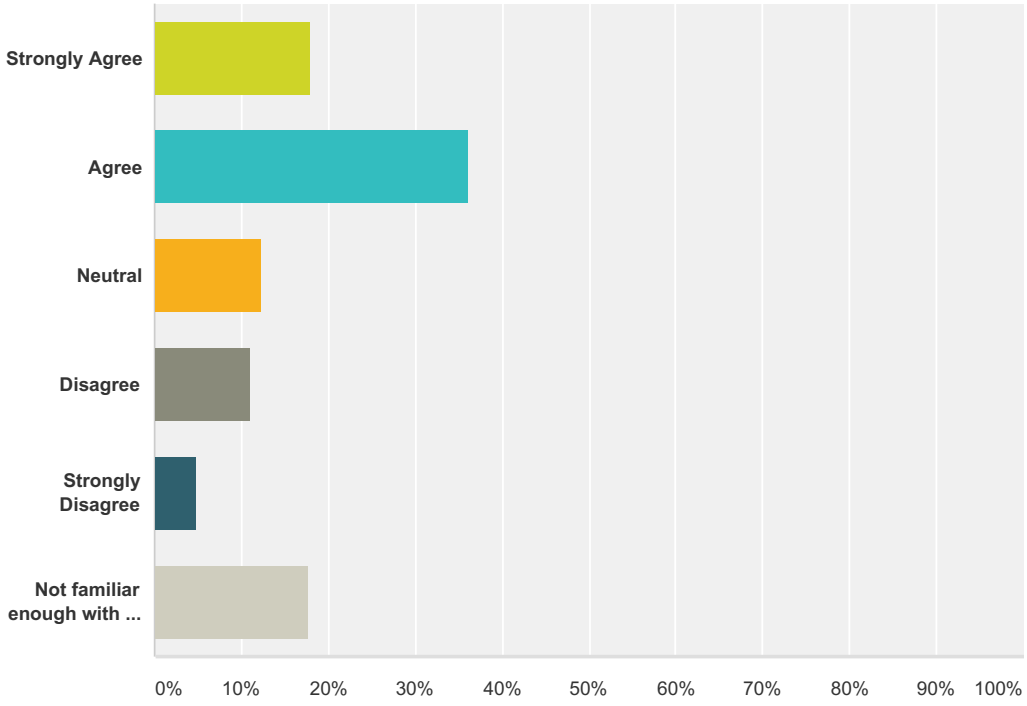
Answered: 531 Skipped: 269



Answer Choices	Responses	
Fully Implementing	**15.07%**	80
Partially Implementing	**50.47%**	268
Not yet	**34.46%**	183
Total		**531**

Q14 The standards and guidance are presented in a logical, easy-to-use format.

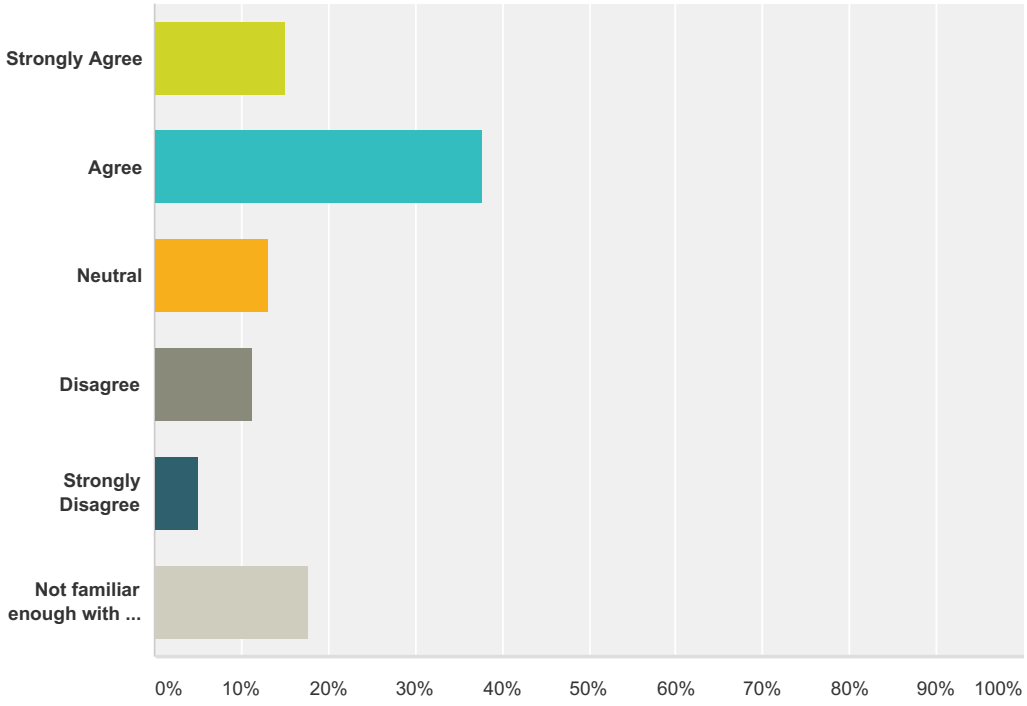
Answered: 573 Skipped: 227



Answer Choices	Responses	
Strongly Agree	**17.98%**	103
Agree	**36.13%**	207
Neutral	**12.22%**	70
Disagree	**10.99%**	63
Strongly Disagree	**4.89%**	28
Not familiar enough with the standards and/or science to answer	**17.80%**	102
Total		**573**

Q15 The standards and guidance are clearly written and easy to understand.

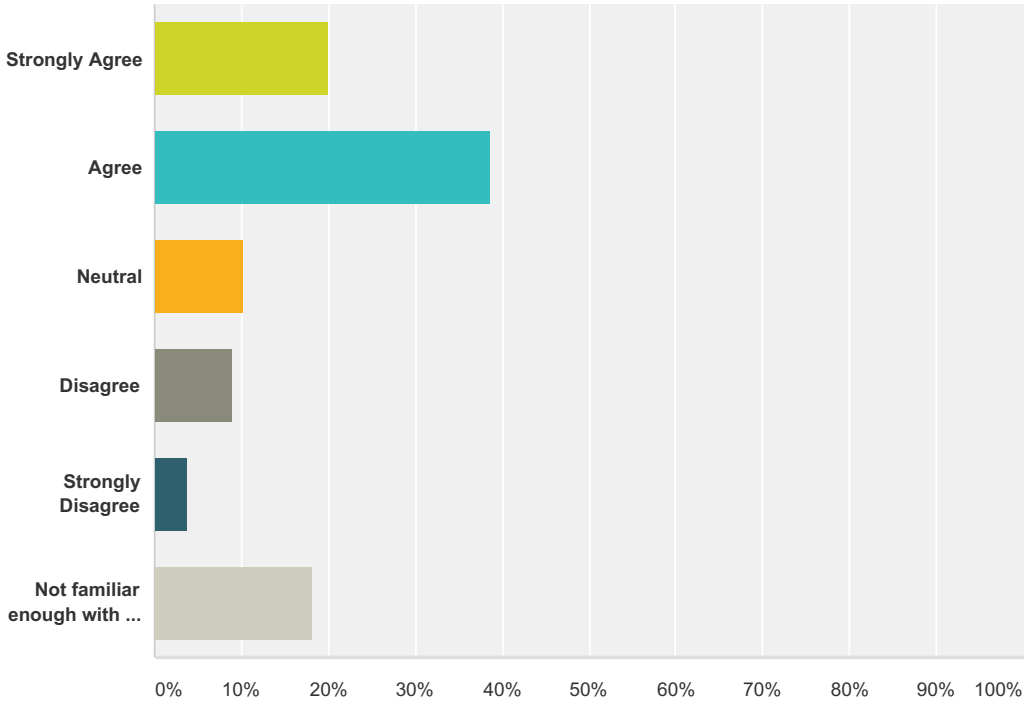
Answered: 574 Skipped: 226



Answer Choices	Responses	
Strongly Agree	**14.98%**	86
Agree	**37.80%**	217
Neutral	**13.07%**	75
Disagree	**11.32%**	65
Strongly Disagree	**5.05%**	29
Not familiar enough with the standards and/or science to answer	**17.77%**	102
Total		**574**

Q16 The standards define “what” and “when content and skills are demonstrated, and avoid describing “how” they should be taught.

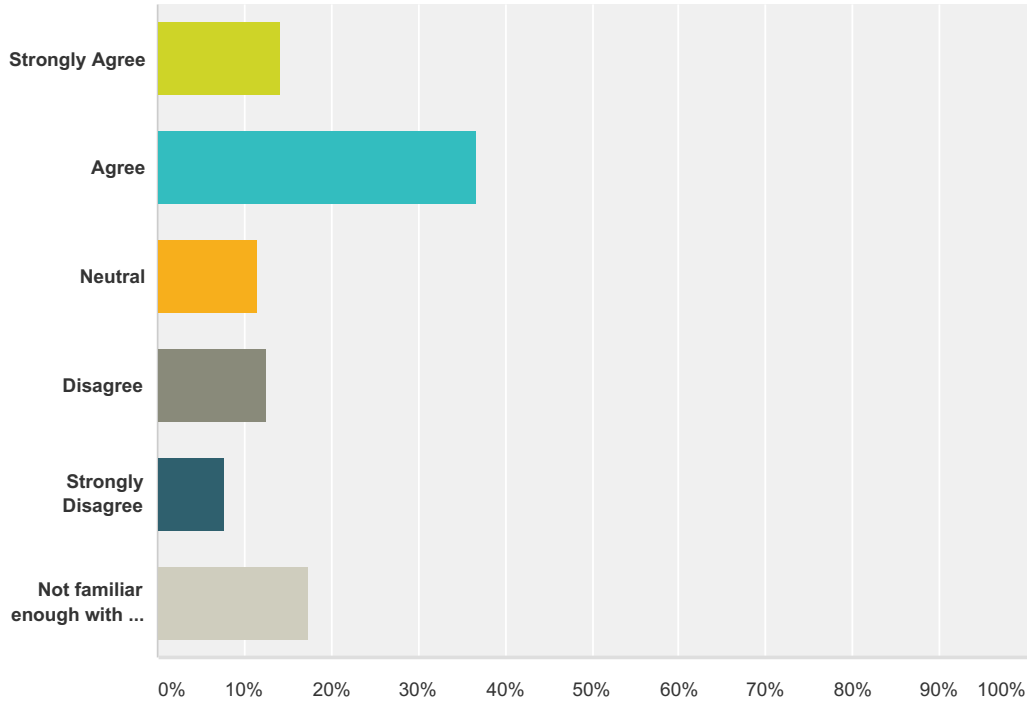
Answered: 572 Skipped: 228



Answer Choices	Responses	
Strongly Agree	**20.10%**	115
Agree	**38.64%**	221
Neutral	**10.31%**	59
Disagree	**8.92%**	51
Strongly Disagree	**3.85%**	22
Not familiar enough with the standards and/or science to answer	**18.18%**	104
Total		**572**

Q17 The standards include enough specificity to guide the local development of curriculum, instructional units, and assessment.

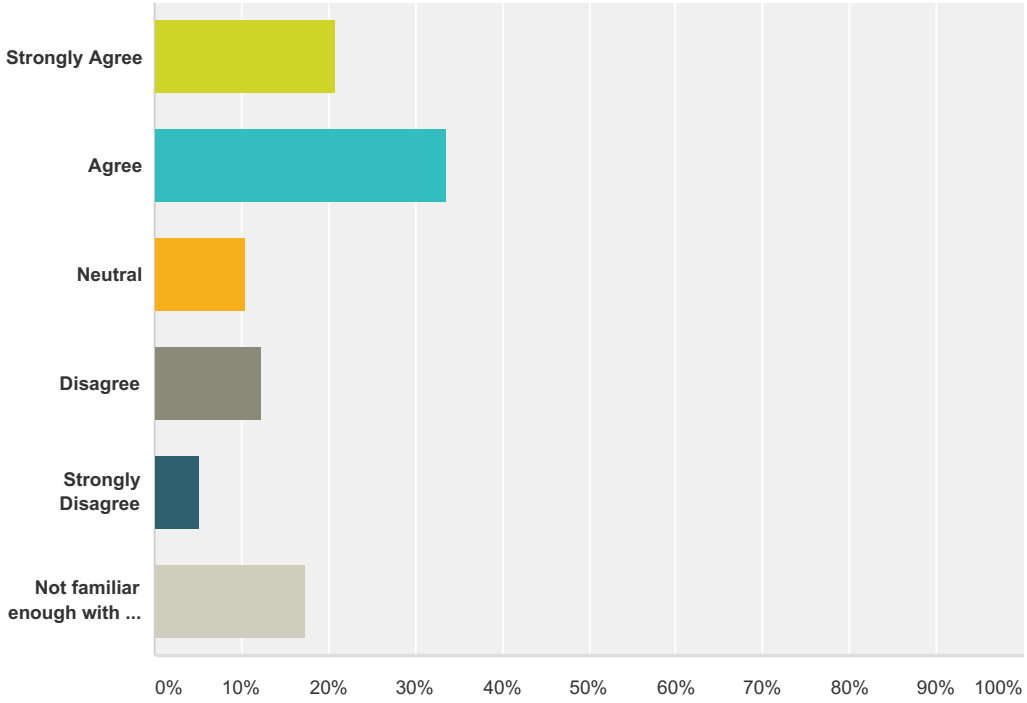
Answered: 570 Skipped: 230



Answer Choices	Responses	
Strongly Agree	**14.21%**	81
Agree	**36.67%**	209
Neutral	**11.58%**	66
Disagree	**12.46%**	71
Strongly Disagree	**7.72%**	44
Not familiar enough with the standards and/or science to answer	**17.37%**	99
Total		**570**

Q18 The standards focus on content and practices that are most important for students to learn.

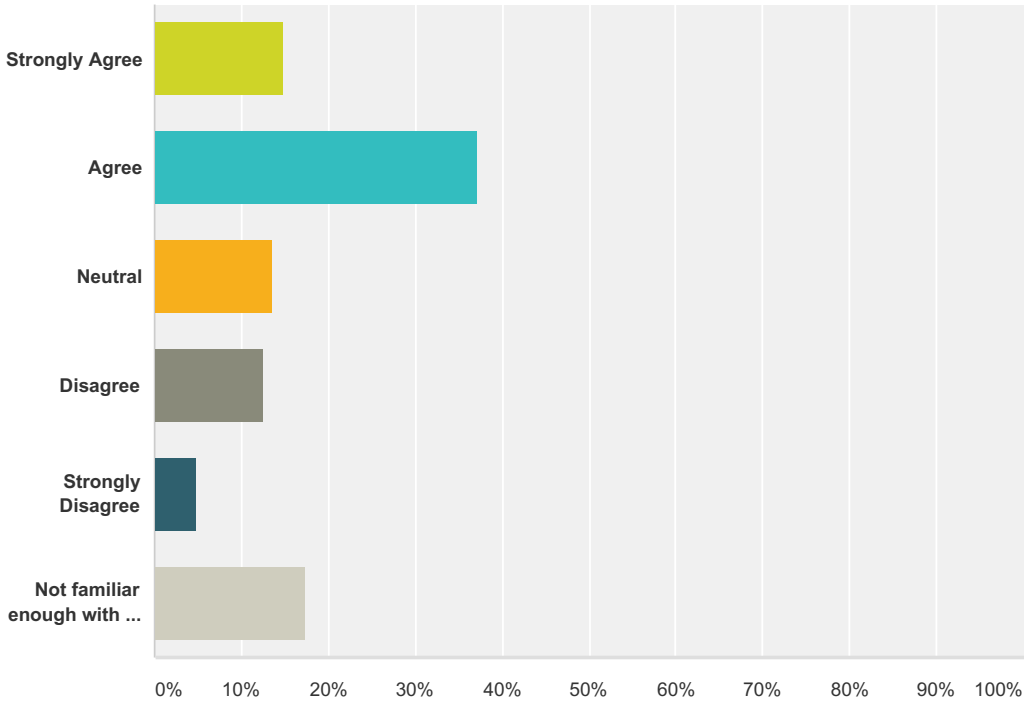
Answered: 564 Skipped: 236



Answer Choices	Responses	
Strongly Agree	**20.92%**	118
Agree	**33.69%**	190
Neutral	**10.46%**	59
Disagree	**12.41%**	70
Strongly Disagree	**5.14%**	29
Not familiar enough with the standards and/or science to answer	**17.38%**	98
Total		**564**

Q19 The standards are measurable and assessable at the classroom and district levels.

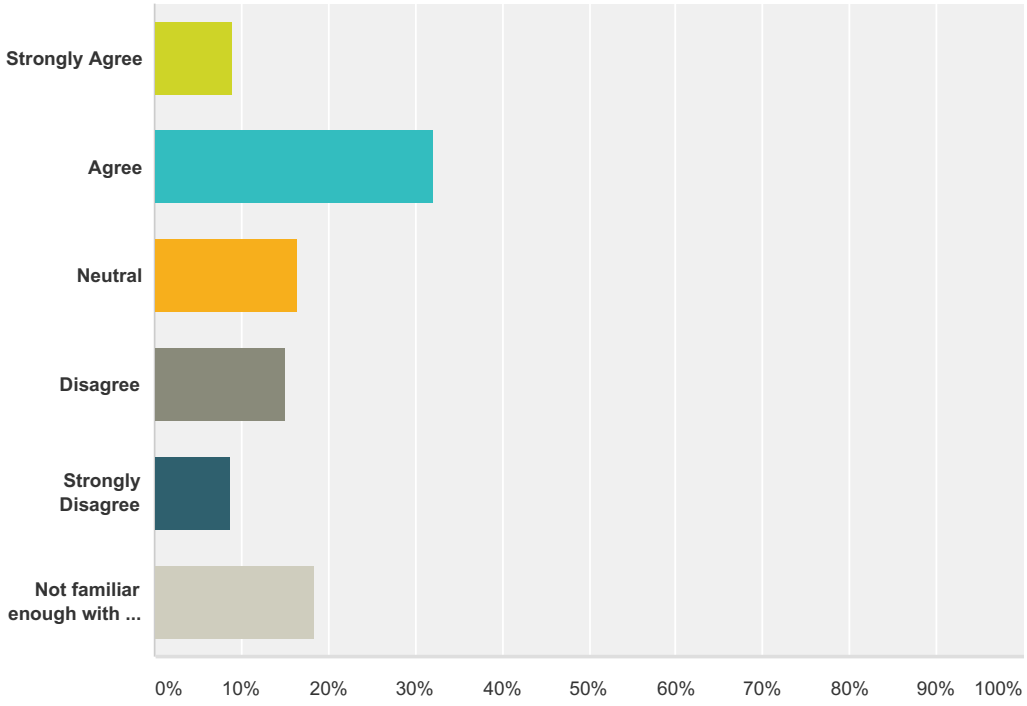
Answered: 563 Skipped: 237



Answer Choices	Responses	
Strongly Agree	**14.92%**	84
Agree	**37.12%**	209
Neutral	**13.50%**	76
Disagree	**12.43%**	70
Strongly Disagree	**4.80%**	27
Not familiar enough with the standards and/or science to answer	**17.23%**	97
Total		**563**

Q20 The standards are measurable and assessable at the state level.

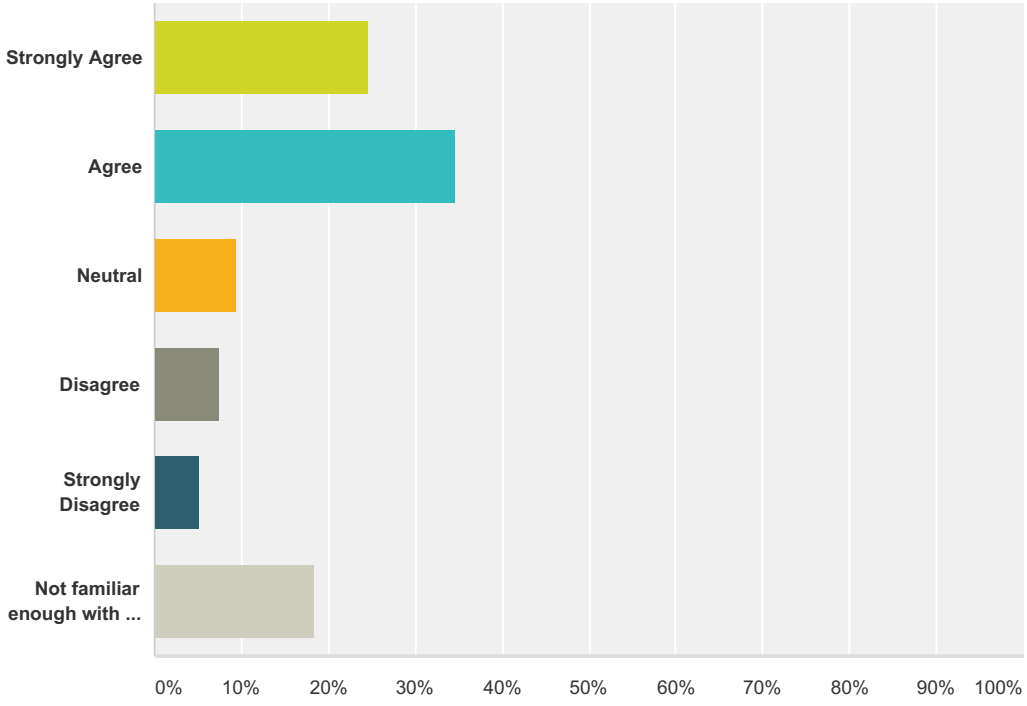
Answered: 569 Skipped: 231



Answer Choices	Responses	
Strongly Agree	**8.96%**	51
Agree	**32.16%**	183
Neutral	**16.52%**	94
Disagree	**15.11%**	86
Strongly Disagree	**8.79%**	50
Not familiar enough with the standards and/or science to answer	**18.45%**	105
Total		**569**

Q21 The standards support the development of appropriate knowledge and skills (e.g., core content knowledge, critical thinking, problem solving, communication and collaboration skills, creativity and innovation, and scientific literacy) for students to be career and college ready.

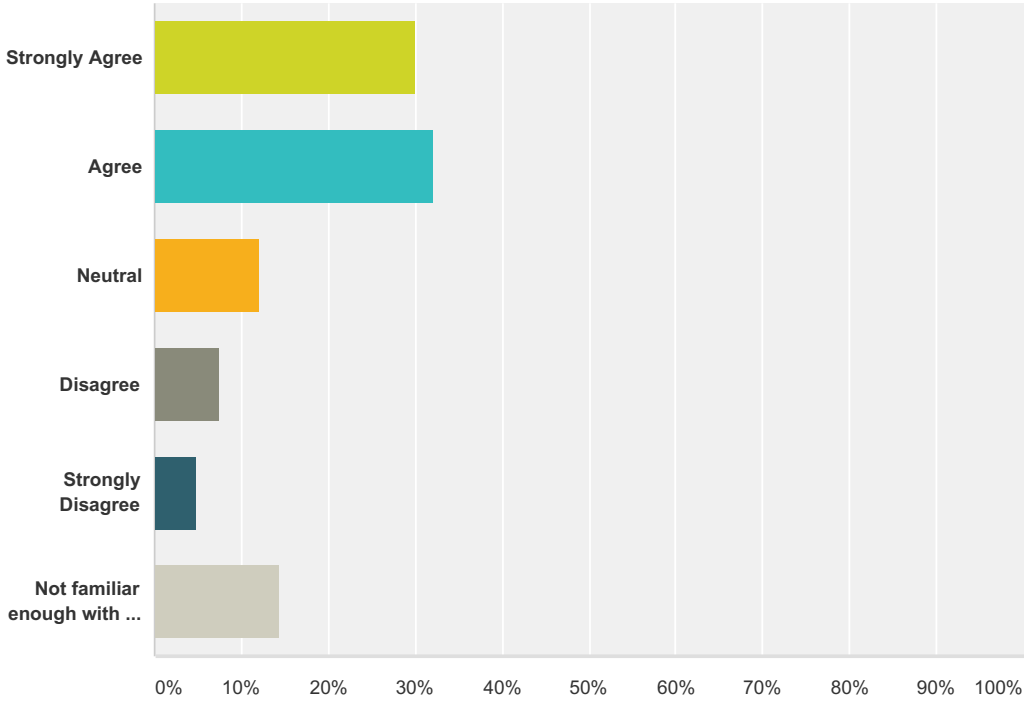
Answered: 567 Skipped: 233



Answer Choices	Responses	
Strongly Agree	**24.69%**	140
Agree	**34.74%**	197
Neutral	**9.35%**	53
Disagree	**7.58%**	43
Strongly Disagree	**5.29%**	30
Not familiar enough with the standards and/or science to answer	**18.34%**	104
Total		**567**

Q22 Michigan students would be better prepared if classroom instruction more closely reflected the Michigan Science Standards practices with instruction focused on application of content knowledge and skill?

Answered: 568 Skipped: 232



Answer Choices	Responses	
Strongly Agree	**30.11%**	171
Agree	**32.22%**	183
Neutral	**12.15%**	69
Disagree	**7.57%**	43
Strongly Disagree	**4.75%**	27
Not familiar enough with the standards and/or science to answer	**14.44%**	82
Total Respondents: 568		

#	Additional Comments	Date
1	The application of content knowledge and skill are good, I just don't believe these Science Standards are the right ones they should be applying. Some of it is good, other areas need improving.	10/10/2015 10:07 AM

2	I completely disagree with the Project Based learning method. I have watched students (including my own children) learn the minimum necessary to do their part of a group project, and ignore the other 75% of the topic - just because they can. A teacher needs to teach to all the class the same lesson. Then they can work through problems/examples. Then they can apply what they have learned in individual projects or laboratory work. The scientific method for writing up research projects/experiments must be taught correctly. These standards will dilute even more the teaching of science. Teach the facts, memorize the basics....then apply! This method is all backwards. I completely disagree with it.	10/8/2015 11:40 PM
3	Great stuff, but classroom teachers will not change how they teach and assess if you keep giving content based multiple choice tests.	10/7/2015 6:18 PM
4	Science students do not need to quote information. They need to learn to think and problem solve like a scientist. "Doing science" is much more impactful than hearing about it.	10/7/2015 3:17 PM
5	Comments/Responses assume the MSS are interpreted using the Topic arrangement of the NGSS guidance document posted. The PEs do not stand alone and are not easily interpreted, nor do they on their own, support curriculum, instruction, and assessment development. The intended definitions of the practices, DCIs, and CCC as indicated in the elements (bullets in the foundation boxes) are necessary for interpretation and implementation.	10/7/2015 1:36 PM
6	I met; State of Michigan Dept. of Education, Off. of Education Improvement & amp; Innovation Stephen Best, Assist. Director Sept. 17, 2015 COMMON CORR INVITATION IN BATTLE CREEK The Math and Science Center is at 117 W. Michigan 5 TO 8 PM A great presentation, very knowledgeable and committed to what he believes in. He also had what seemed to be several supporters located though out the audience that also gave valuable insight to the presentation and background. I liked the entire presentation and evening.	10/7/2015 11:00 AM
7	Leave it alone.... Common Core is a disaster!!!!!!! Stop destroying the education system with common core. Leave the Science standards the hell alone.... Common core is nothing but a one size fits all government controlled cash cow. Wake up MED!!!!!!!!	10/6/2015 1:17 PM
8	We are talking about ALL michigan students, and that's a pretty big animal. I would say that this document is a good start.	10/5/2015 4:33 PM
9	These standards are fundamental in ensuring that Michigan is on the map when it comes to science education and excellence. Our students will be cutting edge, out-of -the-box thinkers who are collaborative problem solvers and real world engineers.	10/5/2015 3:53 PM
10	Consistency among the state with grade-level bands would be helpful for students who move either within our state or from another state all together. A student could potentially miss huge components of K-12 science education if they happen to move to a district that paces the curriculum differently, and in the 21st century, students and families are more transient.	10/5/2015 2:40 PM
11	As a professor of science education at Michigan State, I implore you to adopt these standards	10/4/2015 11:06 PM
12	This is true if ALL teachers had the necessary PD for instruction in this manner. At present, there is only a small group of teachers in the state that have received PD in this new framework.	10/4/2015 3:40 PM
13	The standards represent a significant step forward from the current Michigan standards in their coherence and inclusion of current science knowledge.	10/4/2015 2:23 PM
14	These are children, not biochemists! You are expecting way too much of our young children. You fail to give teachers resources to teach them, yet hold our teachers to unrealistic expectations! Our Legislators need to grow up and stop bullying our teachers!	10/1/2015 10:20 PM
15	The NGSS standards focus on how to do science which are the skills need for students to be successful.	10/1/2015 5:19 PM
16	Too many of the questions on this survey asked more than one thing, so how can the questions be answered with multiple choice? After reading the new standards, the same problems exist as with the old standards. You tell what to teach up until middle school, then it is a free for all. You imply that a "new" way of teaching is going to start with the new standards. Really? All you have done is identify how science has always been taught. Science has always tied together multiple disciplines, it has never existed in a vacuum. This only tells me that the writers of these new standards are not familiar with teaching science. Looking good on paper is not what teaching or learning is about. Everyone learns in a different way. This constant obsession with telling a student how they should learn or what they should create is exactly why they are not learning.	10/1/2015 2:19 PM
17	I believe some of the Physical Science standards are too advanced to be necessary for most students (like the universal law of gravitation and coulomb's law), while many other important topics in physical science that students interact with routinely are not in the standards. My concern is that too much emphasis will be placed on teaching to these standards and other important concepts will be missed.	10/1/2015 8:12 AM

18	Middle Level needs to be more clearly defined for state testing mandates. Since testing is in 7th grade for science state needs to define content taught in 6,7,and 8th instead of leaving it open. (Or not have the test till end of 8th grade for middle level) Current model has options that could lead to testing irregularities	9/30/2015 9:13 PM
19	Colleges still teach Chemistry, Biology, Physics, Geology, etc, as stand-alone classes. They go into depth in one area. If the colleges don't change, we aren't really preparing them for the next step by cutting out content in chemistry to teach these "engineering" skills. I also do NOT favor the incorporation of earth science into a chemistry or physics class. Teachers who are not DX certified are getting pushed out of their specialist role.	9/30/2015 8:13 PM
20	NO COMMON CORE!!!!! These standards are directly tied to COMMON CORE!	9/30/2015 6:16 PM
21	I'm assuming you mean the MSS performance standards.	9/30/2015 2:41 PM
22	I believe more in students constructing the knowledge and working through inquiry, not always just application.	9/30/2015 1:54 PM
23	Students learn more and gain a better understanding when they are using science practices and science ideas to explain phenomena. This is the way that I taught for 20 years and this is the way that I have encouraged teachers to teach science as a curriculum leader and classroom coach.	9/30/2015 12:38 PM
24	There needs to be more about energy. Michigan residents are generally not well informed about how energy impacts their day to day life and how technology and innovation will lead to tremendous changes in this area in the coming decades. There needs to be instruction on how energy, in particular electricity, is generated, stored, and transmitted and how this is likely to evolve in the coming years. Electrical engineering is a sought after field and your engineering practices seem must more focused on civil and mechanical engineering practices.	9/30/2015 12:33 PM
25	I do not agree with the language "content knowledge" as it gives the perception of rote learning and memorization instead of scientific concepts or conceptual understanding of core ideas in science that are applied to real world situations and phenomena. The language of your survey should reflect the language of the Framework and intent of the Performance Expectations.	9/30/2015 12:02 PM
26	By actually learning science by doing science investigations and combining the practices of designing scientific models, scientific explanations and risking sharing their thoughts and ideas through science argumentation, children are able to construct their own scientific knowledge. Parents and teachers are able to understand what children understand and be able to help them to dig deeper into knowing and understanding the world around them.	9/30/2015 9:23 AM
27	All students need need to be familiar with the most current scientific thinking and discoveries. They need to be equipped to understand the world they will be living in, a world that will most assuredly be affected by the world's changing climate. Students will be shortchanged otherwise.	9/29/2015 8:25 PM
28	These standards integrate science practices in meaningful way that will better prepare students for STEM careers, which is much needed in Michigan.	9/28/2015 1:08 PM
29	Absolutely - students will be far better prepared for future encounters with science and engineering if they have to use science/engineering practices to discover and formalize their understanding of science/engineering.	9/28/2015 10:49 AM
30	The proposed Standards help to integrate how scientists practice science in a meaningful way -- this will help students prepare for STEM careers and/or inform them about how science is distinct from other forms of investigating the world, thus allowing them to be thoughtful and discerning citizens in their everyday lives. The Standards reflect what science educators and researchers have themselves learned about learning progressions in different science disciplines and thus these stand to be an excellent model for teaching and learning about science content.	9/28/2015 9:11 AM
31	Students would be better prepared if they learned the practice of science rather than concentrating so much on content.	9/28/2015 7:13 AM
32	This is in reference to question #21 (which did not have a box). I struggle with question #21 as it assumes "college and career ready" are one in the same. This is simply not true and a fallacy. The push for the Michigan Merit Curriculum was made on this assumption and we are seeing that after about a decade, this argument does not hold up. That said, I am somewhat neutral on #21 because of how the question was framed. However, the new Michigan Science Standards will better support career bound students (NOT the same as college bound) as there is more of an emphasis on skills and competencies needed for Michigan Works-related career fields (such as advanced manufacturing).	9/25/2015 11:26 AM
33	My daughter is now a teacher in the Plymouth-Canton district. She was disturbed this past year because the TESTING that is required interrupted about SIX WEEKS of instruction. Part of it was because the state required the schools to test each grade separately (6-8) since the tests were not developed in a timely fashion. She did not teach a science curriculum (she teaches a foreign language), but her classes were interrupted by the TESTING. Meanwhile, she is required to teach ALL of the curriculum, even though her students were involved in the testing for so long. This type of interruption to instruction is OUTRAGEOUS. I don't think that most parents are aware of the effect that TESTING has on instruction.	9/25/2015 9:57 AM
34	Michigan children deserve high quality science instruction. They deserve high expectations.	9/24/2015 8:50 PM

35	Not all students want to pursue scientific careers. It is unreasonable to assume they need all this information.	9/23/2015 10:39 PM
36	The standards seem well out of a 4/5 year olds skill set and communicative abilities. The standards need more real life examples of how a student will show they have gained the outcome. No reference is given.	9/23/2015 1:02 PM
37	First, content knowledge and skill must be addressed, then, as time permits, application. If the focus is on application, without the underlying understanding of content knowledge, then the instruction is pointless.	9/22/2015 3:15 PM
38	Frankly, the existing standards worked relatively well. As a population, we constantly want to change or "improve" something, without really examining why the system is not working. Change in education is driven by the notion that the standards are flawed. We can no longer afford to acknowledge that many of our educational failings are driven by the decay of the family unit and the general ignorance of the American population.	9/22/2015 3:02 PM
39	I feel that science is not taught well in the primary grade levels. I have been in several class rooms where science only happened an hour every other week because the school is to focused on other things. If students worked in science more in these levels we would see an improvement in all academic area.	9/22/2015 12:49 PM
40	I HATE the way the standards are written, both for MI and NGSS. I agree with the practical application aspect, but in writing the standards that way, you neglected to tell us (i.e. list) which specific content pieces (e.g HSCEs) to use. That is too vague and allows for way too much variance in what and how teachers are going to teach this. That means there will NOT be the standardization you're looking for across the state. May I suggest in the companion document you specifically list what HSCEs or content pieces need to be included in each standard? That would make this soooo much easier. I actually prefer the current MMCC curriculum. It tells me exactly what to teach (gives me a list of HSCEs). That's what I need. Add that into this please! Also most schools don't have the equipment for this type of teaching. How do we "fix" that in this money-tight world?	9/22/2015 10:09 AM
41	6-8 is still vague and unclear.	9/22/2015 5:33 AM
42	The children of Michigan need new, forward-thinking science standards because science has changed. Society has changed to a knowledge driven society. Given these rapid changes, we can’t even predict what specific knowledge our children will need in the future for jobs and a lifestyle that we likely can’t imagine. We must equip our children with the conceptual tools to use knowledge to solve problems, innovate, make decisions, and learn and apply new information.	9/21/2015 3:04 PM
43	The standards seem to be focused only on application and very little content.	9/21/2015 2:37 PM
44	The standards seem weak. By HS, students should be using AP curriculum.	9/21/2015 10:21 AM
45	The teaching and developing of the critical thinking skills in a coherent way will better prepare our students for college, and more importantly, life	9/21/2015 9:38 AM
46	I agree with this statement except for the fact that colleges still do not focus on skills. Courses in college, especially early in college, are mostly content based. Skills are nice, but content is still important background information for success in college. I teach biology and the new standards do not focus on molecular biology and a lack of background in this area will hurt students in the health related majors and fields.	9/21/2015 9:08 AM
47	I strongly agree with number 22 above!	9/20/2015 4:59 PM
48	no, i'm not familiar with the standards. i'm 66 yrs. old. BUT- I DO REMEMBER what i learned and didn't learn in school. science was science, and religion was not science, and the 2 did NOT overlap or intrude or in any way even acknowledge each other. and that's the way it should be. religion is NOT science. period.	9/20/2015 11:35 AM
49	The focus currently seems to emphasize content knowledge much more than skills, which does not appear to be an upgrade of the content standards from the existing HSCEs and GLCEs in science. With the NRC framework for science and engineering practices for students, it is curious that there is not as much focus on the skills development in these new MI Science Standards as there could be. Revising content knowledge standards, without upgrading the skills and practices that are necessary to distinguish content knowledge of today from that of yesterday, seems like an effort that will do do no more to move us beyond our roughly 30% proficiency in science for students exiting our K-12 school system. The state performance results over the years should be enough to suggest that the current focus on science content knowledge isn't enough to get our students proficient in science before graduation. We need content and skills, not just content.	9/19/2015 9:37 AM
50	STEM, STREAM and STEAM need to be taught. Science needs to be rigorous and relevant to the lives of the students.	9/19/2015 9:35 AM

51	The new science standards are very powerful because they will help students learn how science is actually DONE in order to generate new knowledge. In the past, too often, science has been relegated to a series of facts that students are forced to memorize (much as students used to be forced to memorize an endless string of dates in history courses). Just as in history, students are going to learn what we want them to know if they are allowed to learn it within a context that is relevant to them. This context is what the standards will provide because the instruction will use examples from the state of Michigan to show how science applies to phenomena and in the solving of problems. The standards are composed of three areas of science - the practices, the core ideas, and the crosscutting concepts. The practices articulate what scientists and engineers actually do in their day-to-day work, the disciplinary core ideas are the facts that form the foundation for development of new ideas, and the crosscutting concepts represent the ways in which scientists and engineers look at challenges that they wish to address.	9/19/2015 9:32 AM
52	students go to college with all kinds of misconceptions and such about science. Both in content and in how science is done. We need to send students to college who are prepared to move on. Instead, they need to be retaught things they should already know.	9/19/2015 9:29 AM
53	The NGSS standards seem very broad and non-specific when it comes to content knowledge with a very large emphasis on process and engineering schools. Overall the standards (physics in particular) seem very vague overall and at times weirdly specific. For example, not all of Newton's Laws are specifically mentioned, yet students are expected to know the specifics of how wireless communication signals are transferred. It is important that students have a strong foundation in the basics. They can't apply what they don't know to begin with. I wonder if the increased emphasis on process is truly beneficial if it means students get a less thorough understanding of the subject itself. The draft of MI's new standards does not align well with NGSS in the engineering process area anyway (according to a document published by MDE). Since NGSS so heavily promotes process and thinking skills, if the new standards seem to leave some of that out (and I wouldn't say that is necessarily a bad thing -- there isn't a great deal of class time to teach so many other things and the necessary science) what is the point? I am not convinced that the new standards are an improvement over the HSCEs.	9/19/2015 6:23 AM
54	The inclusion of climate change and its effects must be a vital part of this curriculum	9/18/2015 7:54 PM
55	Does not address depth and breadth of knowledge expected.	9/17/2015 11:02 PM
56	Considering the strong, strong anti-science climate of American public life today, more people educated in science and its methodology and purpose would eliminate a lot of ill-considered mischief and outright fabrication prevalent in modern public discourse. Couldn't possibly hurt.	9/17/2015 9:48 PM
57	Students would be better equipped to participate in scientific endeavors if they had practiced science, engineering, and design of investigations before critical ages.	9/17/2015 9:31 PM
58	I recommend that the section on climate change be brought more strictly into accordance with received scientific theory. That is, it should be brought into conformity with the overwhelming evidence that it is occurring, and at unprecedented rates, and that human activity is the dominant agent driving it.	9/17/2015 6:11 PM
59	I feel that Michigan students should be taught what is really happening to our world and why - climate change is scientifically proven and we need to prepare and attempt to slow it	9/17/2015 5:48 PM
60	Michigan needs to spend more money on all students equally,try new innovative teaching techniques,smaller class sizes.We are preparing them for minimum wage jobs or to become career criminals not college.	9/17/2015 5:12 PM
61	My district focused on hands on science . It no longer can because of lack of funds.	9/17/2015 3:34 PM
62	With the ability to expand outside the box.	9/17/2015 3:01 PM
63	I have not been a part of the educational system since 2009, and have not kept up with the educational guidelines since that time. I do think that we need the highest possible standards. Kids learn what we expect them to learn; low standards lead to low achievement.	9/17/2015 2:44 PM
64	I strongly support the need to teach students accurate information about climate change, it's urgency and its sources.	9/17/2015 12:17 PM
65	I do object to measuring student progress with totally written materials. Some children cannot read up to grade standards for various reasons, but the general test is "read the question and answer the question". There needs to be a better for these children, not placed in a program, just "Johnny can't read this material, get him the help he needs to take the test and show his skills in this subject".	9/17/2015 11:58 AM
66	In my career in libraries, especially at the elementary level as well as my theatre background and my experience directing young people, it is clear that learning by doing is far more permanent than learning by listening and/or workbooks. The repeated emphasis on factual knowledge followed by opportunities to practice and contribute information is commendable.	9/17/2015 11:39 AM
67	This is a "Push Poll"	9/17/2015 11:16 AM

68	It is very important that education on climate change issues be incorporated into our schools, as our students will have to face the issue in their own lives in the future.	9/17/2015 11:11 AM
69	The future is absolutely dependent on an enlightened citizenry. The world cannot delay any longer the application of scientifically proven knowledge that can help save our beloved planet.	9/17/2015 11:04 AM
70	The general public does not have a clue to what is going on or what is proposed .	9/17/2015 10:53 AM
71	In chemistry especially, enough topics are not addressed to make a student able to succeed in a fast-paced university general chemistry course. For example, in college, students perform stoichiometric computations early in the first semester, and hopefully they will have learned a non-algorithmic approach, but I see no evidence of this in the standards. I don't think that there is enough problem solving in the standards. I'm not sure how much lab is being taught. Students will need more exposure to the many types of chemical changes, and compounds and be able to differentiate them. Equilibrium, Kinetics, Ionization, and use of mathematics all need to be added. Having students construct macroscopic, microscopic and symbolic representations is important as well. I think that the chemistry standards and expectations are too low to prepare a kid for college.	9/16/2015 2:53 PM
72	My husband, a friend and myself went to the Common Core New Generation Science and Social Studies information meeting for the public. As I listened, the thought came: The Public Schools are making themselves OBSOLETE. They are really refusing on purpose, it appears, to educate American children. ‘New” science standards are impossible for teacher and student. 1. The method used psychologists call Cognitive Dissonance: Scientist Pavlov produced a similar state in dogs. He conditioned them to salivate separately to 3 different sounds (buzzer, bell, other) but when he used all 3 sounds at the same time, the dog got confused and withdrew from reality (In this case learning/ education). It is torture of children. They become overwhelmed by the lessons that make no sense. 2. Standards are presented with no knowledge of appropriate age and ability. Simple subjects given to older grades and way complex concepts are given to kindergarten thru 2nd grade. They can’t read reliably and they are supposed to do research?? It’s like the standard writers threw a bunch of papers with experiments on them in the air and as they landed they wrote the ‘standards’. 3. Teachers are panicking as they don’t have time for these expansive vague plans. Where do they get all this complex machinery? In a responsible science program, the experiments are done in High School laboratories with the equipment. 4. A lot of the efforts seem to be indoctrination in controversial global warming theory and controversial evolution origins if the earth and universe. Time by layers. Assumed evolution from similar design. 5. ‘Investigations’ not scientific method which appears to not be on the agenda. Kids should learn how you do an experiment in a way that your proof is valid. They should learn the scientific method steps. 6. Most ‘lessons’ are stated very vaguely as projects and ‘investigations’. It doesn’t sound like science. Many could keep an adult company busy full time. 7. The language is simplistic not crisp and scientific. It sounds like the writers don’t know what they are talking about. They pull out terms that seem out of context. 8. Young children can’t develop arguments. High School debaters can. Children can’t reason and generalize until at least 6th grade and it is a talent that needs work over time. 9. Activities call for using complex ideas which have not been taught in lower grades. Traditional science is not evident. 10. NGSS seems to make space for depth and rigor by eliminating entire fields of physics and engineering including thermodynamics, optics and electronics and just about everything that has been learned since 1950. 11. Energy is never rigorously defined, although that could be easily done in High School using algebra if they had enough of it.	9/16/2015 10:56 AM
73	Encourage more hands-on and experiential opportunities	9/16/2015 9:48 AM
74	The term "focused on application of content knowledge and skill" means what, more testing? Standardized tests don't reflect the Career Center/Vocational knowledge bases students need, nor do they reflect, for example, a student's knowledge of how to set up a microbiology experiment. Stating that classroom instruction needs meet the Science Standard's "application" isn't specific enough. Should students learn more about working in a biology lab? Yes, if they are entering a science-intensive program at college, but wouldn't be applicable to those who are working toward mastery of culinary arts. Students working toward culinary arts would benefit more from intense study in the environment needed to grow bacteria in a kitchen, work space, serving vessel, etc. A student looking to go into the field of medicine would need more of a focus on anatomy, chemistry, and maybe microbiology. When "standards" are supposed to be set for all, they risk dilution. For the above-mentioned career, engineering classes wouldn't be relevant, but for a student studying even career automotive, some exposure to engineering would be helpful.	9/14/2015 2:09 PM
75	I feel the science and engineering practices and cross cutting concepts are the most important part of the standards. PD must focus more on the instruction through the practices and ccc and less on the content.	9/14/2015 10:01 AM
76	Our students are faced with scientific decisions every day. We currently are not preparing our students adequately enough for them to be scientific literate students. The United State continues to drop in our proficiency in science compared to other nations. While Michigan is behind significantly to the other states. These standards are research based founded on the K-12 framework. Not moving forward with these, is not only staying still, it is moving us back.	9/13/2015 8:51 PM
77	The state science scores have not been at a level our students should be performing. The new set of standards provide for vertical and horizontal alignment. They also serve as a guide for instructional shifts.	9/11/2015 9:30 AM

78	I would like the standards separated through middle school (8th grade). Having consistency through out the state would be helpful for students that move between districts. High schools are set up more by classes so students who move can still get the classes they need, however most middle schools are set up by grade. If a student moves 3 times in their middle school years they may learn the exact same standards all three years and miss out on many other standards. (Just a thought coming from someone who moved 16 times by the age of 16.)	9/10/2015 8:48 PM
79	Stop trying to make our children good little workers that contribute to society. It sounds like communism. They are children. They have no idea what they want to when they grow up. Not every child is going to have an aptitude for science so don't shove it down everyone's throat. Instead give them exposure to science thru basic knowledge of science in k- 5. Let them build on that in middle school then those with strong aptitudes for science can entrench themselves in whatever area of science they are drawn to in high school and college. Stop trying to make us all the same.	9/10/2015 12:46 PM
80	Application is great if you have the solid understanding of the content to have a chance at success in the application process. Giving up content is not a solution - it is a recipe for disaster. Just like with Common Core Math - students will end up frustrated, anxious, and with low self-esteem. It is child abuse according to many child psychologist experts.	9/9/2015 11:07 PM
81	Michigan assessments would have to be changed to include all three areas of the Framework. Currently, Disciplinary Core Ideas are the main focus of test. Cross Cutting Concepts and Science and Engineering Practices need to be added to assess student understanding of these areas.	9/8/2015 3:20 PM
82	There is a lack of stress on base knowledge in the fields of science. Hands on is great but a new teacher uses the standards to understand what they should cover in a course. These standards are to vague to be of value to a new teacher.	9/7/2015 1:45 PM
83	You are presenting only the performance standards to the State BOE. You do not present content standards. As an educator with 20+ years of experience, I know that the state assessments WILL test content. The standards are too vague to address what content will be assessed.	9/6/2015 7:14 PM
84	why the complete change per grade level in standards? students were exposed in elementary school per grade level to concepts developmentally appropriate...why the big change up...what was wrong with keeping the concepts per grade level...seems silly to have teachers/districts redo all these units....? not cost effective at all. you have teachers that have mastered these units and now won't be teaching them. why??? very disturbing.	9/6/2015 6:36 AM
85	I am focusing on the standards for the high school level. I teach primarily 10th and 11th grade students regular chemistry. I just met with two other teachers from our district, and we could not tell you what we should teach for HS-PS1-3. There are several of the standards that are so general, we could not tell you what should be taught to meet them. They are also written so that the students who are able to take AP classes are the students who could do them successfully. Have you included any brain studies and what the average 10th grader can fully comprehend and apply at that age? I totally understand that we want to increase the rigor, but if you require me to take AP Japanese with no Japanese background, how successful will I be? I have the unique background of teaching and being a department head at both Oak Park and in Birmingham. Over the past 26 years we have gone from the MEGOSE to this. We have children that are more technologically advanced in skill, but they do not have the motivation or desire to learn content to become more technologically advanced intellectually. With this vagueness, standards written for abstract thinkers (not your average 10th graders ability) teachers being held accountable for content on the Science Work Keys along with teacher evaluations that are out of control, districts that are slashing budgets and expecting teachers to perform everything on the 5D checklist, this is going to be a disaster.	9/4/2015 9:35 AM
86	The Michigan State Standards reflect the best research in science education we have today. Implementation of these standards will only improve science education in Michigan, transforming classrooms where students are learning both content and the practice of science and engineering.	9/4/2015 9:09 AM
87	There doesn't seem to be much content in the new standards compared to the current standards.	9/2/2015 4:41 PM
88	Too difficult to "intertwine" the 3 different aspects of the NGSS. Makes it so difficult to implement and assess.	9/2/2015 1:48 PM
89	Specifically digital communications under physics is random and does not fit with the other ideas.	9/2/2015 1:24 PM
90	Michigan does not need it's own standards. It should adopt the Next Generation standards. The Michigan standards are NOT better, more worthy, more detailed in any way shape or form. The Michigan standards do not clearly define what should be taught in 6,7 or 8th grades. How can students be prepared for state assessments when there is no clear expectation of what will be tested in each grade. Furthermore it should be broken down into pre and post M-step assessment. It is inherently unfair to test an entire years worth of content before the year is over. Students end up tested on content that has not been covered unless the state expects the full year to covered in three quarters of instruction.	9/2/2015 9:59 AM
91	They are too general	9/2/2015 9:15 AM

92	These are based on the NGSS standards. That much is clear. However, the NGSS standards are meant to be a framework. The current way the Michigan Standards are represented make it seem like the evidence statements are the exact standards that teachers must present in class. The purpose of these standards is to have teachers create their own "standards" using the 3 aspects (Science Practices, Core Ideas, and Cross Cutting Concepts) as a framework. Teachers need not use the exact pre-formed statements in the Michigan Standards that are already written. Because of this representation, many teachers are feeling pigeon-holed into teaching very specific pieces of content in a very specific way. When in fact, the goal of these standards is the opposite and they are intended to give teachers and students more freedom with their science education.	9/1/2015 2:46 PM
93	This is because the Michigan Science Standards so closely reflect the NGSS.	9/1/2015 2:45 PM
94	Would be better prepared than teaching which other way? Basis for comparison?	9/1/2015 1:33 PM
95	The changes being proposed take us "back to the future", similar to the old SKSS kits of the 70s, which were abandoned for a textbook-based approach, which then generated the Math/Science Center movement with their kit-based approach. Students DO NOT do good science in a vacuum----throwing the parts on the floor and saying "build a car and explain how it works" is so simplistic. Integrating core concepts across disciplines e.g. cause/effect, compare/contrast, classification unknown variables, etc. , and including reading/writing/speaking and vocabulary build a well-rounded STEM student who loves science. We in Michigan keep spending millions to reinvent the wheel without getting better results. Part of our problem is that until recently, and then not in every school, science was not taught daily, nor as an equal partner with reading/math at the elementary level. A lot of time was squandered failing to build science literacy that would have improved test scores and outcomes. Take a look at places like Massachusetts to see a good program in action, and one which is similar to good ones we already have here in Michigan.	9/1/2015 12:39 PM
96	The Michigan Standards don't address the scope or sequence of the Standards. It is too vague and gives teachers NO idea of how deep we are to go. Do you want an integrated approach or a concentrated approach per grade levels? Will State Testing of Curricula be at appropriate times? If space science is taught in 8th grade, when will students be tested on this material? At the beginning of 8th grade, before they have been introduced to it?	9/1/2015 10:35 AM
97	I believe that this is what excellent teachers have been asking for for a long time. We need to essenmtially teach les, but teach it deeper. The iteration of these standards does that. Additionally, there appears to be a better firt , developmentally, to student grade levels.	9/1/2015 9:17 AM
98	This is a really tall order to meet.	9/1/2015 9:16 AM
99	This is truly a key point. As a former high school biology teacher, we have been waiting for Michigan to move in this direction. We know our students will engage more in science and will ultimately learn much more that they can apply to the real world. Michigan will have a scientifically literate citizenry--something to really hang our hats on!	9/1/2015 9:06 AM
100	The emphasis on the practice of science and solving technical problems as relected in the new standards is much more valuable than knowing specific content knowledge that earlier standards were focused on.	8/31/2015 9:07 PM
101	The science standards read (especially the biology and chemistry) as if parts of NGSS were chosen randomly without any thought to having a coherent curriculum that leads students to a deeper understanding of concepts. This cherry-picking of NGSS is not going to improve science education in the state. If NGSS needs to be pared back, then please do so in a coherent and logical fashion, instead of leaving science teachers to try to instruct students on a string of unrelated content just so that they can meet the new state standards.	8/31/2015 2:31 PM
102	I am not completely aware of the standards themselves but trust the process of having science teachers and private sector give input into standards. I am very disappointed in the level of science instruction my 16 year old and 25 year old got in Michigan. Science is almost absent in K-4 and then is very compartmentalized and frankly BORING in middle school. We need to raise the bar for instruction and engagement in science if we want our kids to be successful.	8/31/2015 12:46 PM
103	Science is not a body of "facts" or principals but is an ongoing intellectual activity of the highest caliber and expected performance level. The most important understanding gained by students is an understanding of the scientific method. By understanding the scientific method then such comments as "... it's only a theory ..." or " ... that's their opinion ..." now are understood for the the stupidity and ignorance they reflect.	8/31/2015 9:50 AM
104	These standards will take a lot of guidance and $ to implement. If the state is not prepared to support teachers then these standards will not help students.	8/31/2015 7:50 AM
105	The standards are sometimes vague and other times oddly specific. Many standards assume students will have access to computers and mathematical modeling software.	8/29/2015 10:57 AM
106	But instruction may be complicated by large classes and wide range of student ability.	8/28/2015 8:30 PM
107	Yes, it will, but only it is supported by STATE FUNDING.	8/28/2015 4:22 PM
108	Better professional development will be needed to help provide teacher's with ideas and resources to implement. Time to adjust curriculum and money should be provided to purchase new materials BEFORE it is assessed.	8/28/2015 12:22 AM

109	While the standards appear strong, I feel they do not accurately represent what skills need to be acquired for higher level learning, as it is too heavily based on understanding of "facts" or ideas science has shown, but not enough on how to understand, question or learn new things. The concepts taught look good, but students rarely retain everything they had learned, so the how to learn, how to think critically, or how science is done should be more heavily emphasized, especially at younger ages. With this in mind, it is hard to know if following these standards would improve the classroom or not.	8/27/2015 2:07 PM
110	Classrooms also need materials to use in meeting these performance objectives. Each time we change and add a new content, it becomes expensive to buy materials to use in the students' investigations.	8/26/2015 8:30 PM
111	The content has been moved from one grade to another. We have become professionals in these areas and you are now asking us to teach something new.	8/26/2015 2:45 PM
112	This is basically true - but it is difficult to see where/when the student will get the content knowledge needed in order to meet the performance expectations.	8/26/2015 2:04 PM
113	As a scientist, the best way to learn about scientific evidence and inquiry is to actually practice it.	8/25/2015 7:58 PM
114	The standards need to be grade specific. MI ran into this problem before the GLCE's. The state can not have 6-8 standards, they must specify for each grade. If statewide assessments are involved, then each grade must know. It can't be left up to districts because that leaves holes in curriculum. In addition, way to many students transfer to other districts each year and they either repeat a topic or miss something all together. Yet schools and teachers are held accountable for these students. Not good - get rid of 6-8, make the standards grade specific!	8/25/2015 4:18 PM
115	When teaching and implementing these standards, teachers AND students should be encouraged to use cruelty-free methods to teach standards related to the study of animals and living things. Virtual field trips and videos should be made accessible to educators so that investigations and observations do not affect the safety or well-being of animals. Students in older grades should not be required to dissect animals. Alternatives to purchasing live animals for study should be offered and any animals that are utilized for classroom instruction, if it is absolutely necessary, should have a care plan including regular feeding, natural habitat, and solution for returning the animals to their previous residence or their natural environment. Teaching compassion is important!	8/25/2015 10:12 AM
116	Students graduating from the middle school grades with straight A's in their science classes should have the option to take high school biology at the ninth grade level and not be required to take physical science as ninth graders. This would allow them to move through chemistry and physics sooner an allow them to take advanced college level science as seniors. Your present mandatory 9th grade set up forces gifted science students to sit through a repetitive and often boring 9th grade physical science course designed for students not planning to make science a priority in their education	8/24/2015 8:36 PM
117	There are so many standards that educators have to teach, the application level is extremely difficult to obtain due to time and support from families. In the at risk districts, getting students just to attend school is a difficult task. There are too many requirements in Math, ELA, Science and Social studies to teach with a depth of knowledge and not enough time. When attendance is factored in you really run out of time because an educator is playing catch up with students. Students must show growth on assessments for a teacher to be valued.	8/24/2015 4:19 PM
118	The best feature of the NGSS, in my opinion, is the "boundaries", defining what isn't taught at a given grade level in addition to what is to be taught. These should be retained in any Michigan teaching model based upon the NGSS.	8/24/2015 8:10 AM
119	I think that students currently need a larger background in scientific principles before they are able to apply that knowledge. Many of my students are weak in background, whether it has to do with language, or lack of skills from prior grades. With the graduation requirements for science being 3 years of science, with one in physical science (chemistry or physics) and one in biology, many of our students haven't had space or earth science since 7th grade. While I don't disagree with the standards, and having students apply knowledge, I am apprehensive as to how this will be TESTED by the state and therefore used to RANK schools. While application of concepts has been tested in the past, so has just rote knowledge, which is not present in this standards. The test must reflect the standards, and therefore the application component of scientific principles.	8/23/2015 1:11 PM
120	Having watched the standards evolve since the late 1970s, I find the act of discussion about objectives and local curriculum to be the most beneficial aspect of the concept. Having the state continue to underfund education, particularly in small, rural districts like mine negatively impacts all attempts to improve the teaching of all disciplines. Loading down teachers with more and more 'documentation' with less time to teach, too much emphasis on testing and lack of material fundings will continue to hold education back. We are painting the outside of the house while letting the internal structure fall apart.	8/22/2015 10:48 AM
121	As a special education teacher, in my district we are not provided with materials to teach the Curriculum. I have spent over 200 dollars over the last two years buying science material to teach this curriculum. Also, it is difficult to find instructional materials about "cells" and "genetics" for mentally impaired students functioning at a first grade reading level. While I spend countless hours adapting the materials I buy, it would be nice to have materials that work with Special Education students as well.	8/22/2015 7:51 AM

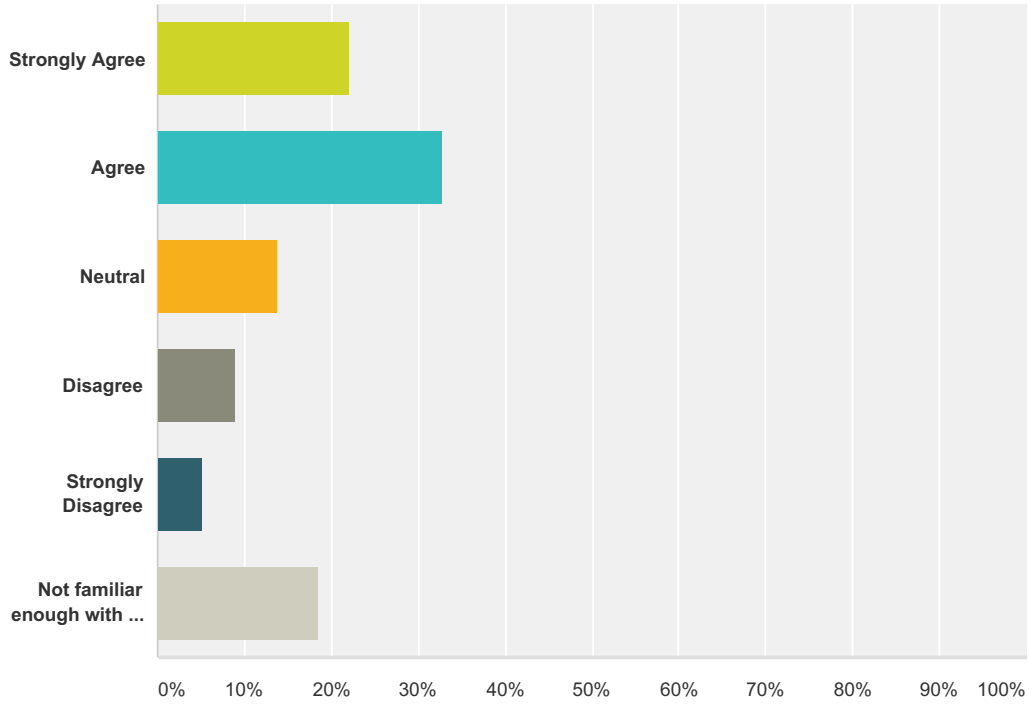
122	The Crosscutting Concepts and Science and Engineering Practices are a critical part of these standards. Removing them from the pages that have the standards on them will result in many teachers removing them from their planning and will promote some teachers to think that they are separate. This framework can only be successful if all three are intertwined. The CCC's and S&E practices are a necessary emphasis for this to impart the change that we want for science students in our state.	8/21/2015 11:41 AM
123	School districts or ISD organizations need sample assessments from the state to guide them in creating innovative lessons that will lead students towards success in the classroom and on state given assessments.	8/21/2015 9:11 AM
124	Better alignment across all subject areas needs to happen in the primary level for science to have the time it needs. It is nearly impossible to teach all the content in a K-3 classroom without units of science being brought into all subject areas. We currently use Oakland County units through Rubicon-Atlas. They are stand alone units for each subject area. This needs to be retooled so that science is part of the ELA units and not separate. Time does not allow for all things to be separate.	8/21/2015 9:09 AM
125	With such a push for achievement in reading, writing and math, the biggest issue with science instruction is time to teach!	8/21/2015 9:09 AM
126	Time in the instructional day must be allocated and practices changed to allow daily instruction in the sciences.	8/21/2015 9:09 AM
127	Michigan students would be better prepared if class sizes were smaller!!!! More kids makes it harder to do experiments and take hands on field trips which are essential to science lessons.	8/21/2015 9:06 AM
128	Michigan students would be better prepared if classroom instruction more closely reflected the Michigan Science Standards in EARTH SCIENCE. Currently most districts don't include an Earth Science as a HIGH SCHOOL course or include content for this discipline.	8/20/2015 5:06 PM
129	The Engineering standards should be integrated within performance standards of the disciplinary core ideas, listing them separately as a discipline does not align with the intent of the Frameworks.	8/20/2015 2:12 PM
130	While I agree that instruction of stat standards focused on application of content knowledge, the above written standards lack greatly in depth and direction of content. As a collaborator of science curriculum for many years, I am concerned about the "Vagueness" of many of stated standards and am worried more for the next generation of new science teachers who will carry on these standards. There seems to be a tremendous amount of interpretation as to the some of the content (as a chemistry teacher I am referring mainly to those) and am concerned for a loss of rigor.	8/20/2015 12:03 PM
131	The technology (engineering practice) are absolutely with out a doubt not attainable in current classrooms. If there specific class that focused on application of science this would be the only way.	8/20/2015 9:46 AM
132	My biggest concern with the new standards is that they are tested at the end of 7th grade, but that standards cover through 8th grade. Some are the standards are developmentally appropriate for 8th grade, but are tested before 8th grade. Districts test scores would better reflect student achievement if tested at the end of 8th grade!	8/20/2015 7:56 AM
133	College readiness means different things to different people. I could not find HS standards dealing with motion, accelerated motion, projectiles, circular motion, Newton's 1st or 3rd. I don't know why the chosen standards are emphasized. While standards are proposed across a wide range of topics -not all standards are created equally. Admin wonders why more time/effort is spent on some standards than other.	8/19/2015 10:37 PM
134	I am all about NGSS. I will acknowledge that they are confusing to someone who is not familiar with them - so a teacher who is used to the old HSCE will definitely need training and support to help them get beyond what might start off as frustration. From my experience, this initial confusion is worth benefits of changing to NGSS.	8/19/2015 8:41 PM
135	The content has been moved to grade levels that aren't developmentally appropriate. (ie first grade has cycles of sun, moon and weather). This was previously 4th grade level content and 4th graders struggled to conceptualize these abstract concepts. Senses are a 4th grade standard and it is at an extremely high level. It appears content was moved just to change it.	8/19/2015 8:29 PM
136	The proposed Michigan Science Standards represent a huge improvement over Michigan's current science standards. They focus on content, skills, and content important for all Michigan students, provide a clear progression of practice, content, and concept development, and guidance for meaningful instruction and assessment.	8/19/2015 8:26 PM
137	I think it will be very difficult to focus on the application of content knowledge and skills without having the content knowledge be an expectation first. It seems like the cart is in front of the horse.	8/19/2015 7:40 PM
138	The standards would be clearer if Michigan just adopted the NGSS standards instead of copying them in different order. It is very confusing for teachers to have these two separate documents that are essentially equivalent.	8/19/2015 7:22 PM
139	The standards never define what specific content to teach. How the application of the content will occur in practice will vary because of no specificity.	8/19/2015 7:05 PM
140	The are too many standards to effectively cover during the school year and the current assessment measures reading ability more than science ability.	8/19/2015 7:02 PM

141	I think the standards (and the NGSS, which they are drawn from) are so vague that they are difficult to understand, write curriculum for, and assess. They are also very, very weak on chemistry content.	8/19/2015 6:27 PM
142	The wording used in the standards (plan, observe, analyze, construct, communicate) are the skills our students will need to know to be successful.	8/19/2015 5:16 PM
143	It doesn't need to be all one or the other. These are the complete opposite of the last standards which begs some questions.	8/19/2015 5:14 PM
144	Most of my disagree statements stem from the fact that the new proposed standards simply seem to have been pulled and/or reworded from the NGSS Performance Expectations. I have worked in a district previously that had adopted NGSS and was in year two of their transition period. In using NGSS you have to refer to all three foundation boxes in order to even attempt to address a performance expectations. Furthermore, the performance expectations were written more for high-stakes assessment. It takes a lot to write multi-dimensional assessments for a performance expectation.	8/19/2015 4:49 PM
145	This question is unclear. Do "Michigan Science Standards" refer to the new proposed standards based on NGSS or the old standards? I am basing my answer on the new proposed standards.	8/19/2015 4:41 PM
146	Application of content knowledge an skill should be learned from application, modeling , projects, and engineering practices.	8/19/2015 4:15 PM
147	22. Michigan students be better prepared if classroom instruction more closely reflected the Michigan Science Standards practices with instruction focused on application of content knowledge and skill? This sentence needs a "would."	8/19/2015 3:39 PM
148	I have been teaching science for 25 years. I agree with the need to emphasize the application of science concepts. But in order for students to truly understand what they are doing the will need a solid base knowledge. Teachers who understand this and are coming from the previous state standards may do a good job of blending the two documents to produced excellent learning opportunities. I fear that teachers who are not familiar with the previous state standards will tend to "do science" for the sake of "doing" rather than truly building a knowledge base, processing ideas and information and the applicartion of concepts.	8/19/2015 3:23 PM
149	What is Michigan doing with the Next Generation Science Standards? Michigan Standards are very similar to the NGSS, which ones are we to address? In the last year or so we just aligned our curriculum with NGSS.	8/19/2015 1:55 PM
150	Shocking to me that in 2015 Computer Science is not represented as "appropriate knowledge for students to be career and college ready." This is why Michigan will continue to trail behind other states and our students will be at a major disadvantage to others, while we will continue to lose population, economic development, and human resources to other states.	8/19/2015 1:23 PM
151	Go back and check 22. for readability "Michigan students be better prepared..." I would like to see emphasis on what should be taught at each grade level for middle school, instead of grouping them together, however, I like the idea of each district deciding what and when they want to teach it. Again, though, I would hate to have a 7th grader move to my school, already having completed some of the work in 6th grade that I may be choosing to teach in 7th.	8/19/2015 1:00 PM
152	Michigan students would know, understand, and apply worthwhile science content if they actually DID science in their classes, and didn't just read about it. the proposed MI Science Standards - if implemented as intended - should help move teachers and schools to actually having students learn science by doing science...and along the way incorporating applying mathematics, informational reading, expository writing, and other valuable skills.	8/19/2015 12:30 PM
153	Standards are too vague to answer this question. It will depend on the teacher who is implementing the standards.	8/19/2015 8:25 AM
154	This question does not really make sense as written. I assume you mean "Will Michigan student be better prepared if classroom instruction more closely reflects the Michigan Science Standards practices with instruction focused on content knowledge and skill?" I agree with this question. Teachers need access to quality K - 12 curricular materials that are aligned with the new standards. They need PD opportunities to develop and improve skills teaching science in a hands-on AND minds-on approach. School districts need funding (read: State Funding) to purchase appropriate curricula and materials and provide PD for teachers. Without materials and PD, which cost money, revising the standards won't make much difference.	8/18/2015 1:21 PM
155	Question 22 is badly written- needs editing, I think. If students are better prepared with application of content knowledge, when do they receive the content knowledge? Vern Ehlers, a former physics professor and federal congressional representative, once told a class that inquiry based education was great but inquiry must be based in content knowledge. Somewhere along the way the content needs to be taught. Sometimes this requires just memorization or Bloom's taxonomy at the first few levels. You can not always just leap in at the top of Bloom's taxonomy- the application level, as stated in this question.	8/18/2015 8:40 AM

156	It seems you are missing a word in your question ??? Students need the basic knowledge BEFORE constructing, designing, etc. Having the construction and design of something as basic scientific knowledge is putting the cart before the horse. The purpose of K-12 science education should NOT be to prepare students for doing scientific things as soon as they graduate but to give them access to a wide variety of experiences from which to choose so that they can become experts in a scientific field post-high school. Most high school students cannot think in the abstract ways necessary to take a subject deep enough to build coherent models.projects based on their current knowledge. Schools have only so many minutes in the day to teach students the scientific principles necessary to be successful at undergraduate study. Now this time will be consumed with building things from legos and connex and other toys when they could be learning scientific basics at that time.	8/17/2015 9:07 PM
157	I am a high school science teacher, and I thought I would welcome fewer standards, however these standards are either so vague that new teachers will be confused and not know what specifics to teach, or so spread apart that there are huge gaps in learning. What happened to Kinematics? Why does physics start with Newton's 2nd law? Why did you jump right to momentum when you first have to understand speed and velocity? And chemistry? Let's just start with the Periodic Table? No... Students need to understand what a particle is and what it's behaviors are far before the PTE is introduced. In several curricula, the PTE is last, a conclusion. Not the first. Never the first.	8/17/2015 7:52 PM
158	wrtgbwrtgb	8/17/2015 3:45 PM

Q23 The Michigan Science Standards represent a coherent K-12 progression of science and engineering practice, content, and application.

Answered: 563 Skipped: 237



Answer Choices	Responses	
Strongly Agree	**22.20%**	125
Agree	**32.86%**	185
Neutral	**13.68%**	77
Disagree	**9.06%**	51
Strongly Disagree	**5.15%**	29
Not familiar enough with the standards and/or science to answer	**18.65%**	105
Total Respondents: 563		

#	Additional Comments	Date
1	Disappointed that the Scientific Method will not be a standard. Stem is not a big enough focus.	10/10/2015 10:07 AM
2	Not a strong enough focus on STEM	10/9/2015 2:43 PM
3	not coherent at all! how do you jump to project based group learning, when they were not taught the basics and asked to use their brain to memorize the basic, and then apply them? This is not going to prepare kids for life-long learning and love of science! It will teach them to do the minimum necessary and scrape by. Horrible! I cannot believe you are actually, seriously contemplating putting our kids through this.	10/8/2015 11:40 PM
4	The standards are vague. Many of the standards need background knowledge to build on, which are not mentioned in the standards.	10/8/2015 1:22 PM

5	You need to add the clarification statements later	10/7/2015 6:18 PM
6	The progressions are easily understood using the resources provided in the NGSS appendices. These should be referenced for that purpose.	10/7/2015 1:36 PM
7	I told Mr Best that I would ask a Teacher friend to contact his office to help further the goals of The Michigan Science Standards to represent a coherent K-12 progression. We have not had a response back from his office yet. Could you have someone contact me at 269-282-0448 as soon as possible? Thank you.	10/7/2015 11:00 AM
8	I have used the standards when teaching kdg thru 2nd grade and find them meaningful, progressive and thorough.	10/5/2015 3:53 PM
9	The GLCEs do not, but definitely the NGSS.	10/5/2015 2:14 PM
10	I have not seen clear definition of what engineering is by MSS. I do not see easy correlation to NGSS engineering practices. Perhaps, this will be made clearer in future documents or demonstrations. The lack of definition will present problems for years to come. Having MSS engineering statements different from NGSS may hinder development of curriculum materials.	10/5/2015 12:26 PM
11	The combination of practices, crosscutting concepts, and disciplinary core ideas is especially powerful.	10/4/2015 2:23 PM
12	It could be time better spent in a good Home Economics and Family Living Course. Students are lacking in basic communication skills even more so than science literacy.	10/1/2015 2:19 PM
13	I love that there will be an emphasis on engineering and design, but those things cost money. I already spend too much of my own money on the science labs we do currently. With these standards should come funds.	10/1/2015 9:09 AM
14	NO COMMON CORE! THESE STANDARDS ARE DIRECTLY TIED TO COMMON CORE STANDARDS!	9/30/2015 6:16 PM
15	The engineering ideas are difficult to implement in certain areas.	9/30/2015 2:53 PM
16	I have not had time to look at the whole K-12 just my discipline.	9/30/2015 1:54 PM
17	The engineering component is vital to preparing our children for the future.	9/30/2015 12:38 PM
18	There needs to be more about energy. Michigan residents are generally not well informed about how energy impacts their day to day life and how technology and innovation will lead to tremendous changes in this area in the coming decades. There needs to be instruction on how energy, in particular electricity, is generated, stored, and transmitted and how this is likely to evolve in the coming years. Electrical engineering is a sought after field and your engineering practices seem must more focused on civil and mechanical engineering practices.	9/30/2015 12:33 PM
19	The progression needs to be accompanied by support documents that describe the progression in greater detail.	9/30/2015 12:02 PM
20	There is no definition on what should be covered in middle school by grade level. It is unclear what content should be covered prior to the Mstep in 7th grade.	9/30/2015 10:32 AM
21	I am very excited to have the science and engineering practices as part of Michigan's science standards! This has been incorporated in my own classroom for so many years, but I feel it will make a huge impact on elementary students' science education in terms of preparedness for 'real life' science application and problem solving!	9/30/2015 10:09 AM
22	The progression of these Michigan Science Standards enable students to add layers to their understanding of the major concepts and then over time to build deep complex knowledge of the communities and world they live in.	9/30/2015 9:23 AM
23	MI Science Standards reflect what we now know about learning progressions in different science disciplines and are therefore an excellent model for teaching and learning about science content.	9/28/2015 1:08 PM
24	I think that the curriculum is advanced, which will make implementation challenging. There are concepts in the MS gradeband that seem to belong in HS and concepts in the HS gradeband that some students don't usually encounter until a first-year science course. That said, if science is taught in a three-dimensional way, in time I think students will be ready for more advanced concepts earlier. The initial transition will be difficult because students will not be prepared, though.	9/28/2015 10:49 AM
25	The michigan science standards provide coherent guidance to teachers for progression of practices, content knowledge and cross cutting concepts from K through grade 12.	9/28/2015 7:13 AM
26	Teachers will know at every grade level what kids should know and should learn. For the first time, we will have engineering taught in our classrooms.	9/24/2015 8:50 PM
27	How can students wanting to go into occupations in the sciences and engineering be prepared to for college when chemistry and physics concepts are spread throughout other classes? They cannot compete with international students whose preparation and logic has been more than sufficiently prepared.	9/24/2015 8:00 PM
28	Not all students will pursue these career fields, so wouldn't it make more sense to focus on things that will suite their future needs? I think a one size all approach to education and curriculum is not reasonable because one size never fits all.	9/23/2015 10:39 PM

29	Standards are very broad and unclear, in many cases.	9/22/2015 3:15 PM
30	Not everyone needs to be an engineer. We should be focusing on a need to understand our world and the factors that impact it.	9/22/2015 3:02 PM
31	I feel that at the primary level (K-6) were better at teaching science that the states overall science program would be doing better. I think that we need to relook at how teachers are certified in science at these levels. I find that their content understanding is not to the part that is should be to teach the Framework or standards.	9/22/2015 12:49 PM
32	It does not appear to me that the standards have any kind of logical progression. It really seems to me as a bunch of activities that someone liked, so it was written into a standard.	9/22/2015 10:09 AM
33	6-8 is vague and unclear.	9/22/2015 5:33 AM
34	While it is commendable this is included, this section is too little and with too little depth. As a female engineer, it appears to be very limited in scope and confined by narrowly defined, highly masculine interpretations of engineering. To engineer is a verb - many of us work in fields where we are actively engineering solutions to societal problems like medical diagnostics (I design microfluidic devices capable of analyzing single cells), environmental processes, smart materials capable of producing shade for the sides of buildings without any power input, etc.	9/21/2015 10:32 PM
35	Our understanding of how to teach and learn science has evolved over the past 30 years. The proposed Michigan Science Standards are based on the best research about science education synthesized in the 2012 National Research Council report, The Framework for K-12 Science Education. This report emphasizes that ALL children in our society need to understand the disciplinary core ideas of science blended with the practices of science and engineering to serve as conceptual tools for using knowledge.	9/21/2015 3:04 PM
36	It would be more helpful if the standards were broken into the courses they represent - chemistry, biology, physics, earth science, etc.	9/21/2015 2:37 PM
37	These learning progressions are one of the many highlights of the NGSS which inform the Michigan Science Standards.	9/21/2015 9:38 AM
38	I would like to see additional life science standards in some of the grades which lack such standards in the current draft.	9/19/2015 10:12 AM
39	Inquiry is crucial.	9/19/2015 9:35 AM
40	The progression is well laid out and articulates clearly how students will grow in science competence as they move through the grades.	9/19/2015 9:32 AM
41	science is a process. It should be taught consistently and in a manner that allows students to build on previous knowledge. And it is key that they discover things on their own to help them remember these concepts.	9/19/2015 9:29 AM
42	Please read prior comment. Also, if the MI standards do not align well with the NGSS in many areas (again according to MDE's own document) it makes very little sense to adopt the content parts of the NGSS and not the process part since the NGSS is designed as a cohesive whole.	9/19/2015 6:23 AM
43	Especially engineering areas do not demonstrate progressions. Elementary building blocks are not well addressed. The integration of different mathematical levels is not addressed. Some areas do not seem age-appropriate based on the content.	9/17/2015 11:02 PM
44	Education is the main tool by which we and our children build the future. Without such tools, the future we can create will be shabbier, smaller, and unstable compared to what we are capable of building. There are some that think it would be better if we did build smaller, shabbier, and were charged more for the privilege. These people must be stopped.	9/17/2015 9:48 PM
45	The progression is coherent but I think in order to teachers to be successful implementing them, schools and the State will need to provide support for teachers, especially elementary teachers, in how to apply them. The emphasis for so long has been on research-based math and reading improvements that the teachers' skills on teaching science are now forgotten and out of practice. If the new standards are implemented, some kind of PD, even if it's a youtube channel with ideas on how to implement especially the new science and engineering practices will need to be provided.	9/17/2015 9:31 PM
46	It takes more money to impliment hands on science activities.	9/17/2015 3:34 PM
47	Although I hope that gas and oil are regarded as History.	9/17/2015 3:01 PM
48	I have read the curriculum standards and feel very strongly that they represent not only a coherent progression, but are based on current, reliable scientific sources. [I did scan the pages of bibliographic citations. What else would you expect of a librarian?]	9/17/2015 11:39 AM
49	"Push Poll"	9/17/2015 11:16 AM

50	I want to point out that the NGSS roll-out a few years ago did not go well. Speaker after speaker kept saying that teachers would eventually learn what NGSS is but could not explain it themselves. The videos on the NGSS website are just commercials. You can hardly find things like density and SI in NGSS. Ask a simple question like how do I use NGSS in a classroom, and you can't even get an answer. I also want to point out that a team of "diversity" specialists designed NGSS to remove white males from the standards. Although Michigan colleges have many more women enrolled than males, males are basically being placed in the back of the bus when it comes to motivating them, educating them, and providing programs. The NGSS standards are too low to prepare a child for college as well.	9/16/2015 2:53 PM
51	They are NOT standards but experiments and do not reflect progression. They are hit and miss not related to age or developmental ability. They often require fancy 'gadgets' making it time consuming for busy teachers with other subjects to prepare. Older methods like studying water in varying aspects through the grades with experiments which could be done fairly easily and are profound. Engineering is making things. Science is about exploring and is encumbered by all the adult practices being put on elementary children. High school students should have concise Chemistry, Biology and Physics classes that arrange the information in ways to be remembered and enable covering all the needed information rather than sticking bits here and there in the K-12 curriculum. In High School labs, the expensive scientific gadgets can be used in safety.	9/16/2015 10:56 AM
52	Show a clear line of progression through the grade spans and are easy to determine what should be taught when	9/16/2015 9:48 AM
53	Not all students should be required to study the same level of all sciences through high school. High schools must allow for some specifications in order to prepare students to graduate with the expectation that high school would be their terminal degree, and in which case, the sciences should be more focused on which field of work the student might like to enter. Preparation for a field in writing in the realm of science is different than, say, work in construction.	9/14/2015 2:09 PM
54	We need to use proven and highly rated standards. We need to STOP this train from moving and use what has worked. MA standards are available for free, have been highly rated and proven to work. Why would we go with standards that have received a low rating and that have not been proven effective in classrooms? Our children are not Guinea pigs!	9/9/2015 11:07 PM
55	Too much emphasis on engineering, not enough emphasis on basic knowledge	9/8/2015 9:38 AM
56	Lack of detail in the standands.	9/6/2015 7:14 PM
57	There are several major concepts in science that are not represented in the proposed Michigan Science Standards. Some of these include the concepts of conduction, convection, and radiation, acceleration and work. The topic of electric circuits including current, voltage, and resistance are also omitted. However, some of these concepts are essential for students to understand in order to be successful with standards that are in the document. For example, how will students fully understand Newton's 2nd law of motion (in MI standards) without a complete understanding of basic kinematics including acceleration? How will students understand that "a changing magnetic field can produce an electric current" if they have not fully developed the concept of current after a unit on electric circuits. Note, actually a changing magnetic field induces a voltage which causes a current--so this standard is and example of one of several statements in NGSS which the Michigan standard is based on that is misleading at best, and bad science at worse. There are more big ideas in science, in particular in the areas of physics and chemistry that are omitted. This document is heavily weighted towards Earth and space science and life science with very little emphasis on physics and chemistry. I am concerned that most graduates of Michigan public schools will not be prepared to major in science and engineering because of the lack of rigor of these standards. Students who are interested in science and engineering may need to take several extra courses (few will probably choose to do this) in order to be prepared for college level science and engineering courses. I am also concerned that most students will not be successful with physical science concepts because of the lack of prerequisite skills and concepts needed to understand the concepts they are expected to learn. I am also concerned that with the large number of standards in earth and space science and biology that students will have little time to develop a deep understanding of these topics and ironically not have time to do in-depth engineering design projects. A simple solution would be to reduce the number of standards in earth and space science so that they could be taught in middle school, leaving three full years in high school for life science and more rigorous physical science standards.	9/4/2015 10:48 PM
58	These Science Standards are from	9/4/2015 4:38 PM

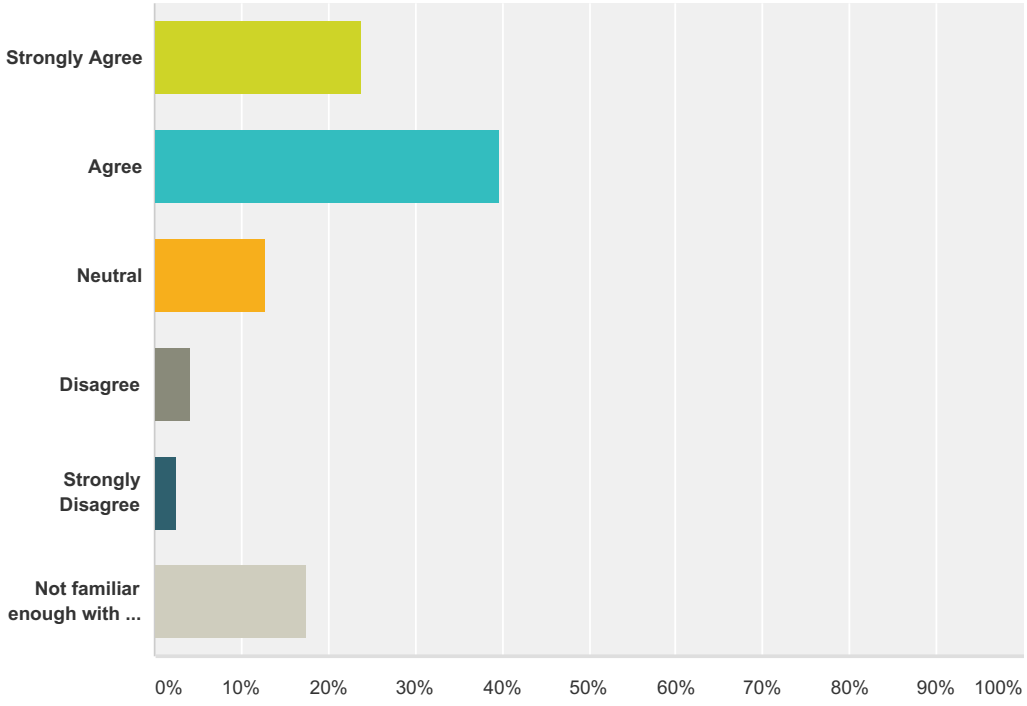
59	The expectations are vague and are many are above the student's cognitive ability at that stage in life. We need to be realistic. They AREN'T ENGINEERS yet. By asking so much of them with no content base, we are going to push more students out of science because they can't and won't. The average student will stop. For some reason, we want them to do brain surgery, but not understand what the parts of the brain are and how they function. We are so stuck on attaining college graduates at the end of high high, that we are overlooking what is real. I have two children, one at MSU and one who graduated from U of M. My U of M daughter is a science major. If she did not have the content background that Troy Schools provided her, she would have failed. Her prior knowledge content base saved her. My MSU daughter is pursing an apparel degree. She does not have a love for science, but is still required to take content based science classes at MSU. If she did not have her prior knowledge, she would not have survived those classes. We really need to step back and look at what we are doing to our children. We need to focus on deeper learning of content and grasping what the basics are. We need to push them hard, but not ask them to construct an atomic bomb at age 15. Are there people who are bringing these around working with these grade levels of students and realizing what they actually can do?	9/4/2015 9:35 AM
60	The 6-8 Grades are banded for the expectations and yet we are going to test them for these expectations in 7th grade? How will we know as teachers know what expectations to teach, and at what times, so they are able to test well? It makes absolutely no sense.	9/3/2015 3:01 PM
61	I don't think they are coherent at all.	9/2/2015 1:48 PM
62	It seems to be vague and incoherent from (6-8) to (9-12).	9/2/2015 9:15 AM
63	I wish that the Department of Education would consider making the 6-8 Standards grade level. As a teacher in a district where students move often, having a set of grade specific standards that is consistent across the state would help ensure that the teachers understand the knowledge base that a student coming in from each grade level should have. I also believe it would allow much better professional development at each grade level. For example it would allow 7th grade teachers to get together to work through the standards. Otherwise one topic might be covered in 7th grade in one school and 8th in another.	9/1/2015 9:10 PM
64	There is not enough development of the pathway that students and teachers need to take in order to get to the end processes.	9/1/2015 4:06 PM
65	Did not read K-8 standards.	9/1/2015 2:45 PM
66	There appears to be no standard progression of standards by grade level.	9/1/2015 1:32 PM
67	I feel that what you have published is just the beginning document of the STate Standards. Much more work and though needs to be put into clarification of these standards so teachers know the scope of material to be taught. These standards are too vague to be considered. There will be no uniformity across the State as different districts try and interpret and create meaningful lessons. If State Standards are being designed to bring uniformity of material being taught across the State, I don't see how this can be accomplished with what is being proposed. Too many different ways to interpret the standards.	9/1/2015 10:35 AM
68	The K-12 progression is excellent. Students will no longer experience that "I did that in x grade already" feeling. They will build on previous learning in developmentally appropriate progressions.	9/1/2015 9:06 AM
69	The standards for chemistry are greatly lacking. Unless chemistry is no longer going to be a required course for graduation the Michigan Science Standards need to be as in depth in chemistry as the current (Michigan Merit) standards are. Without that level of detail, standards in any discipline are pretty useless as guides for instruction.	8/31/2015 5:31 PM
70	Has the state given any thought at all that most of their science teachers have ABSOLUTELY NO EXPERIENCE WITH ENGINEERING. And how are we to prepare students when the engineering material when the example we choose to use for one of the very vague standards listed is not enough like whatever is incorporated into state testing for students to be able to transfer whatever skills they have acquired?	8/31/2015 2:31 PM
71	It is extremely unclear how many of these standards will be addressed in a traditional college prep sequence of biology, chemistry, and physics. In such a sequence where would "space systems" or " engineering practices fit"	8/29/2015 10:57 AM
72	The removal of direct instruction regarding simple machines at the elementary level is puzzling to me. Those understandings are foundational for other concepts, such as potential and kinetic energy, gravitational pull, etc.	8/28/2015 9:00 AM
73	The standards appear to over emphasize content of the classrooms and not emphasize the practice, and application enough. especially at younger ages, when curiosity is highest, more practice and applications should be taught, rather than information.	8/27/2015 2:07 PM
74	Where does the money come to purchase science materials? The money each classroom receives is spent on pencils, paper... The $50 allocated to science is not enough to buy materials for a new topic that we have not taught (waves).	8/26/2015 8:30 PM
75	There are holes in the curriculum some topics like the moon are skipped.	8/26/2015 2:45 PM

76	Coherence is provided by the full scope of the NGSS.	8/25/2015 10:33 PM
77	The PEs alone do not present a coherent progression, but with the addition of the information in the guidance document, the progression of content, practice, and concepts is evident. The NGSS are well written and strongly supported by appendices.	8/25/2015 10:15 PM
78	The MSS represent a coherent progression IF they are accompanied by the foundational definitions of the three dimensions, and the supporting progression matrix documents.	8/25/2015 9:38 PM
79	The standards need to be grade specific. MI ran into this problem before the GLCE's. The state can not have 6-8 standards, they must specify for each grade. If statewide assessments are involved, then each grade must know. It can't be left up to districts because that leaves holes in curriculum. In addition, way to many students transfer to other districts each year and they either repeat a topic or miss something all together. Yet schools and teachers are held accountable for these students. Not good - get rid of 6-8, make the standards grade specific!	8/25/2015 4:18 PM
80	There seems to be a lot of content missing from these standards.	8/25/2015 2:44 PM
81	Let's open the way to allow gifted, motivated science students to achieve at their learning level and avoid Micky Mouse courses aimed at remedial or no motivated students.	8/24/2015 8:36 PM
82	The constant switching of content to different grades makes it very difficult for educators to gain the depth of knowledge needed to teach to the higher levels. Once an educator has begun to learn and develop a deep understanding of concepts, the content is moved to a different grade level making that educator start all over again.	8/24/2015 4:19 PM
83	Samples of engineering projects to be completed as part of the standards would be helpful. We have an extremely talented science specialist working with our kids, but by the end of this year, she was a bit exhausted with creating project experiences just for our grade level, let alone other elementary grades.	8/24/2015 8:10 AM
84	Until we see what kind of evaluation tool is presented, it would be hard to discuss if this is a progression or not. Changing methods of evaluating continually removes any value from the eval process. Continues shifts in standards covered to patch up areas where students score poorly makes it hard for the teachers to develop continuity in their own programs.	8/22/2015 10:48 AM
85	I feel that younger children, for example those in Kindergarten and First grade, need more concrete topics, such as Plants(plant growth, plant parts, etc) and Life Cycles of animals(characteristics of animals, changes, etc). But I see that these items are not included for those grades. I also see that Kindergarten and First grade have no standards under "Structure and Properties of Matter", which is also a concrete topic that younger students can experience through their five senses. If these items are not included in the younger grades, how will small children be introduced to them? Furthermore, I find the Kindergarten science standards lacking. There are only 4 sections total. Actually, I find the entire K-2 standards lacking for content in each of the content areas. Overall, I feel that this is a very short list of standards for each grade.	8/22/2015 10:44 AM
86	I feel they jump around to much	8/21/2015 9:09 AM
87	The standards move us from a content delivery mode to a contruction and critical evaluation of knowledge paradigm	8/20/2015 9:12 AM
88	I am on my districts committee to adapt our curriculum to the new standards and I think the new standards are very good. We are only really having difficulty integrating the engineering practices to life science.	8/20/2015 7:56 AM
89	The proposed Michigan Science Standards provide the foundation for 3-dimensional learning -- a hallmark of college readiness preparation for any/all content area learning.	8/19/2015 8:26 PM
90	This will be extremely difficult to implement, but it is coherent.	8/19/2015 7:40 PM
91	Because of the grade bands the progression will lead to a "mess" with transfer students. Once district will chose to teach "content" in a grade such as 7 where as another might teach it at 8th. If a student transfers then they will have a gap in learning. Not skills but content and the MSTEP will measure content thus putting districts and students at a disadvantage.	8/19/2015 7:29 PM
92	See previous comment.	8/19/2015 7:22 PM
93	Too much, too fast, too soon.	8/19/2015 7:05 PM
94	There are too many standards. The math and reading M-STEP tests took a ridiculous amount of time. My children are missing learning time and the joy of learning due to all the testing they are forced to endure.	8/19/2015 7:02 PM
95	Yes, they are a K-12 progression, something we have needed. They are more troublesome at the high school level, as they are not broken into grades or courses, and they would take four years to cover, but our students are tested after three years.	8/19/2015 6:27 PM

96	The elementary and middle school seem wildly inappropriate developmentally and high school content is sparse and some has been shifted down to earlier years. There are also large strains on cash-strapped high schools like inputting geo science and engineering into schools. Who is going to pay for the implementation, curriculum development, assessment development etc.?	8/19/2015 5:14 PM
97	Yes, I have been excited about the NGSS since the first draft. It truly was done in a well-studied manner having students learn science through 21st century skills.	8/19/2015 4:15 PM
98	Physics first! Physics first! And you have to include math.	8/19/2015 3:39 PM
99	I do argree that the NGSS incorporate the idea of technology and engineering practices but I am concerned that the activities to truly experience many of these things will be beyond the scope of many teachers. There needs to be a strong conceptual focus to each activity often the activity it self gets the attention of the teachers and students and the conceptual component gets lost.	8/19/2015 3:23 PM
100	I need to work through the middle school curriculum to address this.	8/19/2015 1:55 PM
101	Appendix K not withstanding, I think the lack of a defined sequence at the middle-school level is likely to create headaches, particularly in smaller districts whose staffs may possess limited expertise. I can envision the distribution of topics to grades 6-8 being made for reasons that have more to do with the preferences and influence of particular staff members than with a logical progression of topics.	8/19/2015 1:45 PM
102	I focused my attention mostly on secondary standards. I think the state MUST designate content for grades 6 - 8 individually. While I appreciate the effort to let districts decide how to design those curricular areas, we have too many transient students. There have been many instances in which a student has moved into my eighth grade class from another district who ends up duplicating content he or she may have been taught the year before in the previous district or ends up missing content that my district covered in a previous grade. Not having a designated content progression in grades 6-8, and possibly 9, is unfair to students taking high stakes tests and to their teachers who are being evaluated on those test scores. We could easily solve the gap problems by having a state-wide plan for the middle school grades as we do for K-5. All of the secondary teachers in my district share this feeling strongly so I am surprised that the state standards have remained set up this way for so long. Surely, other districts must get new students with the same issues.	8/19/2015 1:34 PM
103	See above comment.	8/19/2015 1:23 PM
104	Need to assign standards per grade level at the middle school, 6-8 levels.	8/19/2015 12:29 PM
105	Again, too vague. Yes, in part they are presented in a good, clear sequence. But difficult to see how the parts fir together.	8/19/2015 8:25 AM
106	This document lists all all standards together as 6-8 grade. It does not give a clear scope and sequence of grade levels. By doing this the individual school districts must come up with which topics should be covered at which grade levels creating inconsistencies between school districts. If a student must move schools during the course of their 6-8th grade years in is very possible that they could miss vital content or be given a double dose of content depending on how the districts have placed topics by grade level. In my opinion it is best for students if there is a clear list of objectives to be covered by each grade level 6-8 just as it is done for K-5.	8/19/2015 5:59 AM
107	I would like to see the MS set up in grade level instead of 6-8. One reason is if students move between districts it is very hard to make sure they are proficient in science. I also think it makes the state assessment more difficult to prepare for. Many districts have moved some of the HS standards to 8th grade because the state test is now at the beginning of 7th grade therefore this will mean the MS standards will really be pushed to 5-7.	8/18/2015 4:27 PM
108	Fine	8/17/2015 9:07 PM
109	It looks like you brought back the Rube Goldberg machines. Woopty doo... Is that something so major that it needs to be a key standard? When there are only 15?	8/17/2015 7:52 PM
110	wrtbwrtbwrtb	8/17/2015 3:45 PM

Q24 The Michigan Science Standards provide opportunities for cross-disciplinary integration, for reinforcing literacy and numeracy skills, and for applications of mathematics and literacy content knowledge.

Answered: 561 Skipped: 239



Answer Choices	Responses	
Strongly Agree	**23.71%**	133
Agree	**39.75%**	223
Neutral	**12.66%**	71
Disagree	**4.10%**	23
Strongly Disagree	**2.50%**	14
Not familiar enough with the standards and/or science to answer	**17.47%**	98
Total Respondents: 561		

#	Additional Comments	Date
1	I'm not sure that this is a positive	10/9/2015 2:43 PM
2	One step at a time	10/7/2015 6:18 PM
3	We have begun building integrated units of instruction using concepts that cut across all disciplines, including the NGSS/MSS CCC, to connect the learning across disciplines and to develop deeper understanding of the content being studies. The conceptual lens has provided a means for integration.	10/7/2015 1:36 PM

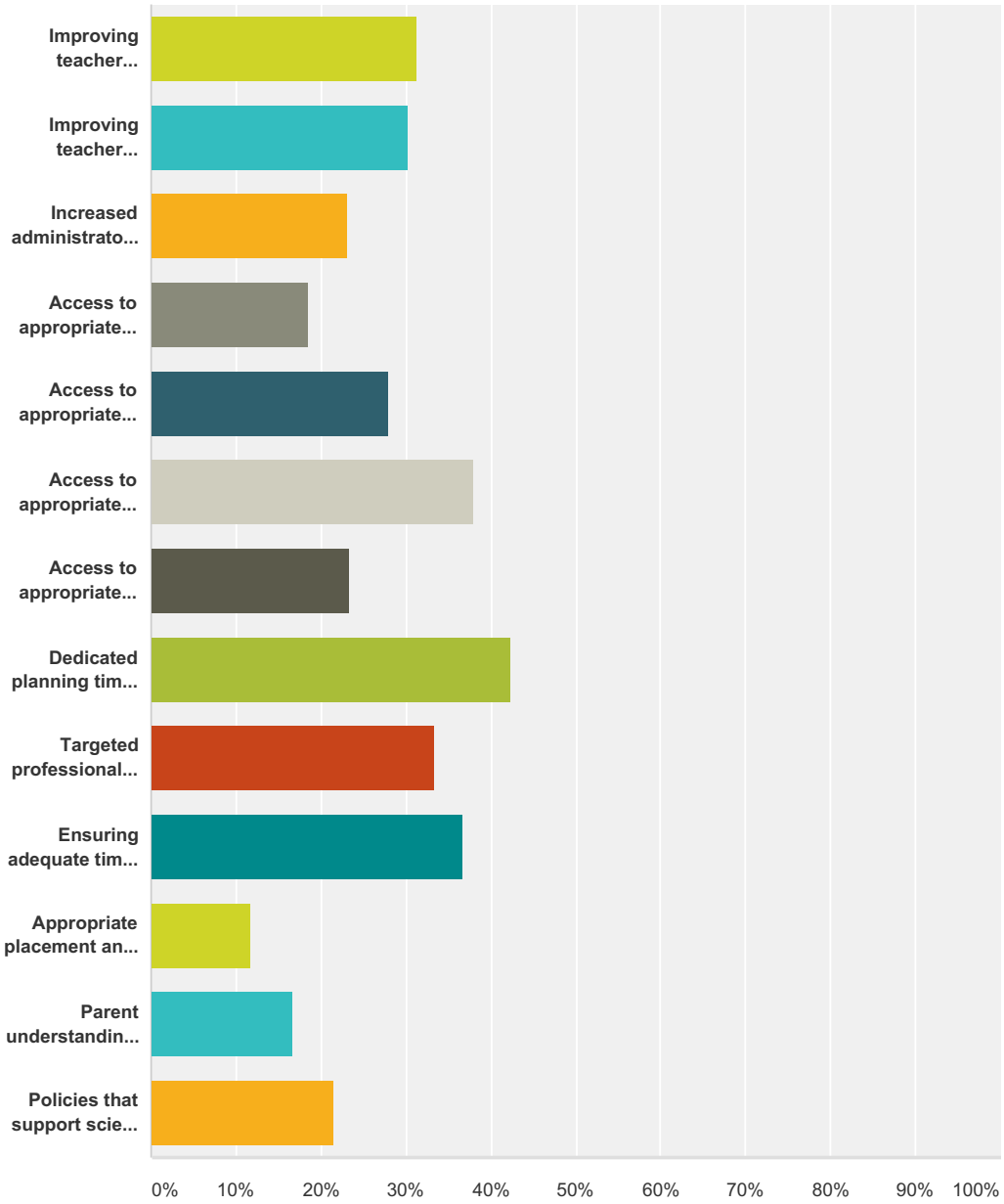
4	Could you have someone contact me at 269-282-0448 as soon as possible? Thank you.	10/7/2015 11:00 AM
5	The GLCEs do not, but definitely the NGSS.	10/5/2015 2:14 PM
6	I believe this is the strong point of the framework	10/4/2015 3:40 PM
7	I agree, but they always did.	10/1/2015 2:19 PM
8	NO COMMON CORE! THESE STANDARDS ARE DIRECTLY TIED TO COMMON CORE STANDARDS!	9/30/2015 6:16 PM
9	Strong integration of math but poor integration of literacy compared to the expectations of my district.	9/30/2015 5:05 PM
10	These opportunities for integration will be so helpful to elementary teachers.	9/30/2015 12:38 PM
11	The cross-disciplinary integration needs to be accompanied by support documents that describe how the integration can be accomplished in greater detail.	9/30/2015 12:02 PM
12	Science literacy is clearly evident in the variety of ways students express their thinking verbally and nonverbally in the practices. Ways to use mathematics to help them make wise decisions by analyzing data and using the data collected by others to make sense of their own data collations leads to discussions within classrooms and outside of the classroom as students learn to share with others to understand complex ideas.	9/30/2015 9:23 AM
13	Opportunities are provided, but I feel that additional guidance would be helpful to the average teacher.	9/28/2015 2:09 PM
14	Implementation of a practiced-based approach to science education as outlined in the michigan science standards fosters cross disciplinary integration and application of language, mathematics, social studies and other skills.	9/28/2015 7:13 AM
15	Students learn most effectively when learning is connected with real life and subjects are integrated.	9/24/2015 8:50 PM
16	Much of these standards have greatly added to the students confusion as well as teachers, from what I have heard them report.	9/24/2015 8:00 PM
17	Again students don't necessarily want to pursue these subjects or fields for their intended career.	9/23/2015 10:39 PM
18	yes they do	9/22/2015 10:09 AM
19	The Michigan Science Standards propose for the first time to combine engineering design standards with cutting-edge science standards to prepare all students to better understand the world. This is so important if our students are to be prepared for careers in STEM.	9/21/2015 3:04 PM
20	The focus on probability and statistics is commendable; in actual science and engineering practice, statistics and probability are used on a daily basis much more often than other branches of mathematics, despite mathematics instructions typically being geared primarily towards eventual completion of calculus.	9/19/2015 10:12 AM
21	The artificial separation of teaching disciplines has led to difficulty for students to mesh their knowledge and skills.	9/19/2015 9:35 AM
22	The cross-cutting concepts and science and engineering practices are by their very nature cross-disciplinary. By using these two foundations along with the disciplinary core ideas, it is possible to easily engage children in applying concepts and techniques from one disciplinary area to a different area (e.g., use physics concepts to understand earth science phenomena). This helps students to see science as an integrated body of knowledge and also helps (as described above) to demonstrate how science and engineering are applied in people's lives.	9/19/2015 9:32 AM
23	see above	9/19/2015 9:29 AM
24	Literacy skills are not strongly coupled with the standards. Levels of mathematics are not outlined at a level to provide an understanding of the influence within the standards.	9/17/2015 11:02 PM
25	I hope they do!	9/17/2015 4:10 PM
26	Children love science activities.	9/17/2015 3:34 PM
27	I strongly agree that cross-disciplinary integration is a very important concept for science education.	9/17/2015 12:45 PM
28	Critical if done right	9/17/2015 10:53 AM
29	They are trying to do too much and end up doing very little. C.C. Mathematics for elementary grades is a real weakness of having a significant science program. The math is cluttered and confusing and takes too long to accomplish even simple problems.	9/16/2015 10:56 AM
30	Integration of ELA, Mathematics and social studies is more closely related to science in the real world than the current model of teaching science in isolation	9/16/2015 9:48 AM

31	This type of description is very vague: "Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity." How does one "construct an explanation" that meets this standard? Is this, for example, a written paper? A video documentary of a performed experiment? There may be applications for cross-disciplinary integration here; however, it's the sort of thing that doesn't speak directly to the way in which it should be expressed.	9/14/2015 2:09 PM
32	While this MAY be true if it happens properly in the classrooms - it is ONLY going to be effective if a lot of time is spent in each discipline actually learning that discipline. There is only so much time in each classroom. Reinforcing is only good if the person has learned something well enough to reinforce it. Again - this may work well if implemented correctly, which is questionable because teachers are never given the training they need with all the new government ideas (that so far have proven ineffective), BUT the baseline knowledge must come first and it does not appear in this case as if it will.	9/9/2015 11:07 PM
33	There appears to be very little math in these standards. It is almost completely omitted in the chemistry standards. There is very little mention of solving problems using equations and analyzing graphs. Math is a powerful and necessary tool for science. Michigan students should be prepared to handle math in science courses as the Common Core State Standards for math provide plenty of math rigor. I am concerned that Michigan public school students will not be prepared for university-level courses in Physics, Chemistry, and Engineering.	9/4/2015 10:48 PM
34	I don't fully understand what they are asking, so I cannot truly respond.	9/4/2015 9:35 AM
35	There is opportunity for overlap of skills in math and Lang art, however the timeframe during a school year could be challenging.	9/2/2015 9:40 PM
36	Some of the standards seem to be very basic and could be taught in a day or two.	9/2/2015 4:41 PM
37	Science has always provided this opportunity.	9/2/2015 9:15 AM
38	Getting bored with survey now.	9/1/2015 2:45 PM
39	So this means you want an integrated approach? Please be clear what you want.	9/1/2015 10:35 AM
40	This is also key. The real world is not lived in a "box" for ELA, a "box" for math, a "box" for science, a "box" for social studies, etc. The real world is fully integrated and to be successful in whatever path a student chooses, that student must be able to think critically in an integrated fashion and have skills in all key areas.	9/1/2015 9:06 AM
41	Any exposure to mathematics beyond basic arithmetic is an advantage to all students, no matter there interests. Sorry but we fast approach a post literacy world. An ability to digest vast amounts of information and data to yield understanding will be essential for todays students. I expect within their life time machines will be capable of performing many tasks currently reserved for humans. We can ignor or even legislate away this challange but there are nations (eg Japan, China, etc) that embrace this culture and can outstrip us reducing us to second world status.	8/31/2015 9:50 AM
42	Standards cannot provide such opportunities. Such opportunities are created by well trained teachers with common prep time and a flexible administration.	8/29/2015 10:57 AM
43	We are developing interdisciplinary units (beginning with elementary years).	8/25/2015 10:33 PM
44	Really based on what the teacher brings to the table, there is too much emphasis on separating reading and math (etc) from the classroom. There should be no separation in Reading, it should be integrated in the course work. Too much time and effort on reading alone (not attached to relevancy) and not enough on reading for context.	8/25/2015 10:16 AM
45	See comment above in regards to study of animals. While science and real-life application of its principals are vital, precautions should be taken that will protect animals that are being studied. It is very possible to successfully teach science without experimenting on or dissecting animals.	8/25/2015 10:12 AM
46	Time for the cross disciplinary integration is extremely difficult to get. The MAISA units that teachers are being forced to use do not allow opportunity to integrate or teach by themes and build units.	8/24/2015 4:19 PM
47	Science has always done this - the jury is still out on how effective this set of standards will be.	8/22/2015 10:48 AM
48	I'm not aware of this in the Special Education curriculum and am against it anyway.	8/22/2015 7:51 AM
49	Resources or time to create these cross-disciplinary integration lessons is absolutely necessary. The state should consider offering PD (potentially free) to administrators/teachers that allows workshop time to create curriculum with access to multiple resources, books, supplies, etc.	8/21/2015 9:11 AM
50	They provide areas to coexist, but many districts are using a program where the units are stand alone. There is no mention of the science standards in the Every Day Math program, which many Michigan districts use. This has to be changed in order for students to have the foundation for future science success.	8/21/2015 9:09 AM
51	Teacher workshops for integration of science standards with literacy and math instruction would be helpful.	8/21/2015 9:09 AM

52	Teachers will need support to adapt curriculum and assess performance objectives, which are significantly different from previous Grade level content expectations	8/20/2015 2:12 PM
53	More integration of subjects needs to take place in elementary classrooms.	8/20/2015 6:35 AM
54	Again, some of this will be extremely difficult to implement, but the opportunities are there.	8/19/2015 7:40 PM
55	True, but I still maintain that the practices don't specifically define what content is included.	8/19/2015 7:05 PM
56	The opportunity is there, unfortunately the time is not.	8/19/2015 7:02 PM
57	I don't think there's much cross-disciplinary integration here any more than the HSCEs. And if the testing still doesn't use any math skills (as our current Michigan science testing does not), why integrate?	8/19/2015 6:27 PM
58	I agree, but I have very low expectations. They look like you do not expect good teaching rather you just want to copy off of the national standards but maintain some publicity about looking unique. Teachers are mostly not prepared to teach this curriculum let alone across disciplines at this point and nothing in the past has suggested that this state is prepared to adequately address this.	8/19/2015 5:14 PM
59	If using NGSS yes - on the bottom of each standards page is shows connections to math and literacy standards.	8/19/2015 4:49 PM
60	This is one of the most important aspects of these standards is the cross-disciplinary integration. The reinforcing of literacy and numeracy skills were very important components that were lacking in our HSCE's.	8/19/2015 4:15 PM
61	The door has always been open for cross-disciplinary integration. If this is the goal then math/science/social studies standards need to be developed together rather than separately. The school day needs to be structured differently. Currently a large majority of our Chemistry and Physics students enter these courses without a reasonable base of scientific knowledge to build upon. Buliding this base through reading, writing, or investigative activities takes time. Even with the reduced number of standards and the focus on big ideas, big ideas need supporting details. Having the time to integrate with other disciplines is difficult. I do see that the NGSS link the various high school science course together better than the current standards.	8/19/2015 3:23 PM
62	The standards may provide this but because of scheduling and size of classes and money constraints this may not happen.	8/19/2015 1:55 PM
63	Again, too vague. The document didn't show how cross disciplinary integration works, or even gives examples.	8/19/2015 8:25 AM
64	Literacy content knowledge requires materials such as books and high-quality web sites (which require computers). Will schools be provided State Funds to make this happen? Otherwise the Standards will not do what they are meant to do.	8/18/2015 1:21 PM
65	But good teachers already do this. Telling them to will not make good teachers any better nor will it make the poor teachers any better.	8/17/2015 9:07 PM
66	wrtbwrtb	8/17/2015 3:45 PM

Q25 What are the implementation priorities you see in implementing these standards? (Please identify top 3.)

Answered: 524 Skipped: 276



Answer Choices	Responses	
Improving teacher knowledge of science content	**31.30%**	164
Improving teacher knowledge of effective pedagogy	**30.34%**	159
Increased administrator support for science education	**23.09%**	121
Access to appropriate resources : textbooks	**18.51%**	97
Access to appropriate resources : other curricular materials	**28.05%**	147

Access to appropriate resources : lab supplies	**37.98%**	199
Access to appropriate resources : technology for instruction	**23.47%**	123
Dedicated planning time for transition to new standards	**42.37%**	222
Targeted professional development related to science updates	**33.40%**	175
Ensuring adequate time for science instruction in schedules	**36.83%**	193
Appropriate placement and certification of teachers	**11.64%**	61
Parent understanding and support of science education	**16.79%**	88
Policies that support science instruction	**21.56%**	113
Total Respondents: 524		

Q26 Please use the comment box below to share general comments regarding the Michigan Science Standards.

Answered: 242 Skipped: 558

#	Responses	Date
1	In addition to my other comments, I believe they are too detailed. Leaves little room for teacher flexibility.	10/10/2015 10:08 AM
2	I am concerned that the Scientific Method is not part of the standards. Use of the scientific method has been a positive in science education for decades. It is been a great gatekeeper for making sure mere theories do not get easily accepted as truth. I'm deeply concerned the new standards are not as rigorous and do not demand the level and proof and testing.	10/9/2015 2:52 PM
3	As an Instructor at the University level in science, and a parent of 4, I simply cannot believe these 'standards' are even considered. The children will not have the basic knowledge base needed to be able to apply toward these projects, as they are laid out in the proposed standards. Teaching biology is completely omitting learning about cells (animal, plant), viruses, bacteria. The previously included anatomy (the human body), proper diet/eating habits, promoting good health through exercise, etc., are also not included at all. I have to deal on a daily basis with adult learners who are supposed to apply what they have learned in their prior years - and the basics are lacking. Their ability to use the data provided to analyze, make conclusions, and provide possible solutions is simply lacking. Please DO NOT adopt these standards, as they will deteriorate our students' learning and love of science even more! I truly believe that the Classical Teaching model, which is teacher centered, is very effective and provides each child the same learning opportunities, with same minimum expectations (which should be high standards), and allow them to flourish with their own best capabilities.	10/8/2015 11:48 PM
4	I think they are fantastic, but I am having a difficult time getting my students to abandon the "textbook/lecture" way of things. I thought they would be excited and more engaged - but it is proving to be quite a challenge!	10/8/2015 7:30 PM
5	You have a whole generation of teachers who grew up memorizing and learning in science classes that look like math class. They look at labs as a waste of time, or at least an ineffective way to teach a concept. Until you test students on process, and give up the massive content question tests,it won't change. You need free training, like the modeling training going on in the summers.	10/7/2015 6:36 PM
6	It would be nice if the State would produce a curriculum that includes example lab activities and other related materials that could be used to teach the classes under the new standards. If we all had a starting point on how to teach and assess our students, we could make changes year to year, but the overall science education would be partially uniform across the state.	10/7/2015 3:22 PM
7	Adopting the NGSS PEs as the MSS is great first step. It is imperative that MDE support the work of the NGSS Lead States by referencing the resources developed to support the transition to NGSS/MSS. And MDE should encourage PD providers to equate the MSS with NGSS.	10/7/2015 1:39 PM
8	I met; State of Michigan Dept. of Education, Off. of Education Improvement & amp; Innovation Stephen Best, Assist. Director Sept. 17, 2015 COMMON CORR INVITATION IN BATTLE CREEK The Math and Science Center is at 117 W. Michigan 5 TO 8 PM A great presentation, very knowledgeable and committed to what he believes in. He also had what seemed to be several supporters located though out the audience that also gave valuable insight to the presentation and background. I liked the entire presentation and evening. It was my understanding that this was to be a team effort between state and local stakeholders? Has that changed?	10/7/2015 11:03 AM
9	Nothing Nothing.....No More COMMON CORE ANYTHING!!!!!!! Stop it !!!!!	10/6/2015 1:20 PM
10	i notice many changes at my grade level. this is going to be very costly to districts. my district just invested in new science materials four years ago when the standards changed. how can teachers become fluent and knowledgeable with their grade level content when it keeps changing every few years. frustrating!!	10/5/2015 5:05 PM
11	I the kids do thier homework and they are challenged in class we should be good.	10/5/2015 4:34 PM
12	The Standards are research based. Teachers, administrators, & professionals have labored to write a cohesive, relatable document that spans KDG-12th grade. The Standards are beneficial for our students, in that they are fluid, allowing teachers to incorporate varying methods when teaching different concepts. The time to act is now. The momentum is growing. Teachers are ready! Michigan is ready! Now is the time!	10/5/2015 4:01 PM
13	It should be emphasized the seamless integration between the Common Core and NGSS. In addition, the section in appendix regarding diversity is invaluable and unprecedented.	10/5/2015 2:16 PM

14	I think that teachers would like to know what the state level testing will look like. Until this is known, people can stay busy working on improvement but, this business may not be optimally directed toward the eventual testing that will be coming.	10/5/2015 12:28 PM
15	I strongly support the Michigan Science Standards, with the condition that the state continues to support professional development opportunities for science teachers during this transition time. These standards are a large paradigm shift for teachers and the state can not assume that teachers will know what to do differently with the new standards unless they participate in sustained professional development dedicated mainly to science content and pedagogy.	10/4/2015 3:44 PM
16	In order to stay current and move forward in science education, the state of Michigan absolutely needs to adopt these standards. Without them, Michigan will lag further behind other states and nations.	10/4/2015 2:27 PM
17	Schools need money to access materials to teach these standards. You fail to give teachers resources to teach them, yet hold our teachers to unrealistic expectations! Our Legislators need to grow up and stop bullying our teachers!	10/1/2015 10:22 PM
18	These will be awesome when implemented but if we cannot fund the transition it will be a disaster. We need Michigan legislators to increase funding so that these changes can be put into practice and the teachers who are transitioning to teach NGSS/MSS will stay in the profession to build a model of success for our students.	10/1/2015 5:21 PM
19	My hope is that the state will provide adequate time for teachers to transition to the new standards. What will need to happen in classrooms is very different from what is currently occurring in classrooms and teachers will require a significant amount of professional learning during the transition and implementation of the standards.	10/1/2015 3:28 PM
20	I feel that the State is trying to hard. Relax and let learning happen. If everyone is an engineer, who fixes your toilet or builds your home? Some of the best teachers are not content knowledge rich, but full of wonder. These standards will turn the wonder of science into a drudgery for teachers and students alike.	10/1/2015 2:23 PM
21	The new standards are based on current knowledge about pedagogy and will better prepare Michigan students for careers in STEM.	10/1/2015 12:08 PM
22	It is crucial that the Michigan Science Standards are adopted. The number of students deemed proficient in science in the state of Michigan is truly alarming. Our students desperately need quality science instruction that engages them in inquiry based exploration, exposes them to core science content, and adequately prepares them for college and beyond. The Michigan Science Standards are key to the rebuilding our schools need for high quality science instruction.	10/1/2015 10:24 AM
23	The science test needs to be moved to 8th grade if the new standards for grades 6, 7, and 8 will be lumped together. We will be reworking science curriculum this year and deciding which standards go in which grade, but this format makes it seem like a guessing game. Teachers need more professional development along with the new standards!	10/1/2015 9:15 AM
24	Physics in high school is often taught in 9th or 12th grade. Many of the standards dealing with physics are too advanced or not applicable for for 9th graders. For example, the standards cover changing magnetic and electric fields, but to get to that point, students will need significant instruction on electricity and magnetism. In my opinion, understanding electricity is much more important than understanding how changing magnetic fields create changing electric fields, etc. and it would be more prudent to reinforce the more basic concepts in high school for all students rather than trying to teach advanced concepts that are not important to most students.	10/1/2015 8:17 AM
25	NO COMMON CORE! THESE STANDARDS ARE DIRECTLY TIED TO COMMON CORE STANDARDS!	9/30/2015 6:17 PM
26	I have concerns about whether or not the new standards will be appropriately funded to allow the necessary lab/engineering supplies and training needed to fully teach the standards. Will the legislature provide districts with additional funding since districts have cut funding for science due to budget constraints? I am also concerned the standards are grade span for middle school when the Science M-step is given in 7th grade. What standards will be tested on the science M-Step?	9/30/2015 5:13 PM
27	I feel we are headed in the right direction. However, some standards seem too complex to be a single standards while others seem overly simplified. I like the depth of knowledge needed and the application of models in the concepts.	9/30/2015 2:55 PM
28	I believe that the MSS are due to be adopted. They integrate concepts that members of society need to understand with the process of doing science and bigger themes that cut across many subject areas. It is critical to our nation and the individual person that understanding scientific thought be understood. Many new findings are coming forth at the current time. To be a literate member of society it is important that all members can understand scientific concepts and understand what they read about when they "google" questions of science.	9/30/2015 2:48 PM

29	They are good overall. I like how there are fewer of the details to cover and more big picture. However, somewhat too general. That can be good and bad. They are very big picture and include so many smaller details that maybe not all see. They are not all equal. One could take a week, while another could take 6 weeks. I see the need for the constructing, explaining, designing verbage but it is unclear whether that exact standard MUST be where they do each. I understand that teachers need to be making sure students are doing these but for that exact standard seems too strict. How will you really assess a student created a model? designed an experiment? They seem way to hard to assess at the state level. Where is the curiosity? The scientific literacy? The other process things that we can't assess but are important. The state needs to back off and let us teach. The curiosity has been beaten out of kids due to so much testing. We want kids DOING science and I do think these standards can allow for this but I am worried. Will there be some detailed companion document that ties us down? Although, a companion document will help clarify the level and depth of these things.	9/30/2015 1:58 PM
30	I think that these standards are a step in the right direction in helping Michigan to move forward regarding science education. Many teachers across the state have already embraced them. There needs to be support at every level to help others to make this shift.	9/30/2015 12:49 PM
31	There needs to be more about energy. Michigan residents are generally not well informed about how energy impacts their day to day life and how technology and innovation will lead to tremendous changes in this area in the coming decades. There needs to be instruction on how energy, in particular electricity, is generated, stored, and transmitted and how this is likely to evolve in the coming years. Electrical engineering is a sought after field and your engineering practices seem must more focused on civil and mechanical engineering practices.	9/30/2015 12:33 PM
32	The MSS are a good start for presenting a model of instruction that can help educators provide instruction that is cross-curricular and meaningful to students. I am excited that MSS has adopted the PEs from NGSS as the foundation for state standards. As a member of the Michigan NGSS Lead State Committee, I am aware of the great deal of time and care that went into helping review and craft the PEs so that they reflect a progression of learning that will help our students develop their ability to think and reason to solve problems.	9/30/2015 12:09 PM
33	They seem to be missing standards on teaching about the ocean. There is one standard on water's impact on surface features but that does not really encompass, waves, tides, or currents. Considering the ocean covers most of the planet I am requesting a standard be added to address it.	9/30/2015 11:28 AM
34	I am hoping that the Battle Creek Area Math & Science Center that already provides our district's science curricula resources will provide us with the best possible revisions and training to meet the new standards. Lessons focused on learning objectives with formative and summative assessments.	9/30/2015 11:04 AM
35	A clear understanding of climate science is a crucial part of any high-quality science education program!	9/30/2015 10:50 AM
36	It is so important that we have specific standards per grade level. Given the amount of students who move districts and the test held in 7th grade--I feel it imperative that the standards be aligned per grade at the middle school level. Chunking all of the standards as middle school is not fair for the teachers or the students!	9/30/2015 10:34 AM
37	Although having all the CCC, DCI and practices on the same page as each strand/grade is easier, the Michigan Science Standards are straight forward and easy to read. I look forward to helping teachers understand how something that looks so simple is quite deep in instructional possibility. It would be very easy for a teacher to 'skip over' the preface pages and not realize the importance of these intertwined pieces that are so integral to effective instruction of these new standards. I do think that having Engineering Design as a separate category will lead to an 'engineering unit' in many classrooms instead of an integrated approach. There will need to be so much support for professional development at the district and county levels.	9/30/2015 10:14 AM
38	Unclear by option Targeted professional development related to science updates. Clearly the one one issue is changes in professional development for both pre service and inservice teachers at all levels. Followed by administrators. They have to know why to look for in order to observe and evaluate teacher performance based upon these new expectations. They will need to understand the kind of professional development their teachers will need and how to build school improvement plans to assist them in this transition. They need to know what are the skills of teachers they need to hire. Parents will need and want to know how to partner with the teachers and other parents helping students create science knowledge in a variety of ways in their own communities and extended communitiies.	9/30/2015 9:33 AM
39	#19: All of the above. It is essential that students learn and understand how the real world actually functions! - and to think analytically and evaluate the many conflicting things we are told today. Meddling by ignorant and biased politicians is terribly damaging, both to our students and to our collective future. Here is a quote, ascribed to MLK, which I ran across today: "There is nothing more dangerous than sincere ignorance and conscientious stupidity."	9/29/2015 9:28 PM
40	Michigan Science Standards should be based on sound scientific principles and the latest discoveries. Students must be fully equipped to understand the world they live in and this, in large part, comes through a solid understand of the sciences. To compete in today's world and to make intelligent decisions about the use of resources requires a firm understanding of science and the scientific approach.	9/29/2015 8:46 PM

41	I am not familiar with these standards, but I support the concept as a start to better education, so long as they do not hinder development of critical thinking skills in our students and classrooms. Other aspects to education (arts, music, etc.) also need to be better supported. It really begins with parents and families - parents should be accountable.	9/28/2015 3:42 PM
42	Very pleased to see that the Michigan Science Standards are very similar to NGSS, which received the approval of NAS and NSTA!	9/28/2015 1:10 PM
43	I think that the standards, when fully implemented, will be excellent for preparing students in science and engineering. Despite the effort and resources, I believe that to transition everyone over will be well worth the effort. The implementation will take a lot of resources - financial resources and time to get teachers/administrators on board and time to get students used to learning this way. The biggest issue I see is that they are abstract. That makes them easy for anyone to misinterpret. Most educators will look at this and go, "where do I teach the [fill in blank]?" [rock cycle, periodic table, kingdoms of life, conduction/radiation/convection] . They are hard to interpret and leave some room for confusion. Especially without the guidance material being part of the standards, some educators may miss entire components of the PE. So I think they will require a lot of concrete "translation" for anyone working with them, especially educators and administrators. The standards will require most teachers to facilitate much more in the classroom, which will also mean that they will need a lot of PD/support to do this effectively. I also think there are some minor things missing in the Michigan Science Standards. For example they don't explicitly include NOS principles, just the NOS connections made in the Guidance document that copies the PE's from the NGSS website. Since the standards do not include the NGSS appendices, they don't include all eight of the Nature of Science principles in NGSS in each grade-band. I can see the value of streamlining the standards, but each of the core NOS ideas are important and I wonder if student understanding of NOS will be patchier as a result. For example, the idea that "Science is a way of knowing used by many people, not just scientists." is a very important idea that is supposed to be addressed in the middle school grade-band. It's not attached to a PE, though, so as far as I can tell it's not in the standards. The same applies to several of the subpractices outlined in Appendix F on the NGSS website. I think some aspects of NGSS (and therefore MI Science Standards) are arbitrary - like the specific connections between PE's and engineering design principles (for example, every student has to construct, design, and test a device to release or absorb energy?) I think it would be good for the MI Science Standards to allow for more instructor choice as to how to incorporate the engineering design principles. (while still providing specific examples and guidance) Thanks!	9/28/2015 11:50 AM
44	The proposed Standards help to integrate how scientists practice science in a meaningful way -- this will help students prepare for STEM careers and/or inform them about how science is distinct from other forms of investigating the world, thus allowing them to be thoughtful and discerning citizens in their everyday lives. The Standards reflect what science educators and researchers have themselves learned about learning progressions in different science disciplines and thus these stand to be an excellent model for teaching and learning about science content.	9/28/2015 9:12 AM
45	The current focus of science education in michigan and other states is content knowledge in isolation. Often the students do not see the connection between the material in their current science course and from courses they took previously. Also they often see little relevance or application of the science content to their everyday world. Changing the focus of science education following the guidance of the michigan science standards will provide students with the opportunity to experience the practice of science and using engineering technology examples they could relate science practice and content to their everyday world.	9/28/2015 7:25 AM
46	It's a tall order for teachers who may only have one or two subject specific courses in science to implement these standards. Consider hiring a science specialist for each building at the elementary level to teach content.	9/25/2015 4:47 PM
47	How would this change effect veteran teachers and certifications?	9/25/2015 12:54 PM
48	For the past 18 months, we have been scaling up our measurement topics, learning targets, learning progressions, and assessment systems for this transition. It is a good change for our students in Michigan and we truly hope the legislature does not get in the way of this transition.	9/25/2015 11:31 AM
49	My daughter is now a teacher in the Plymouth-Canton district. She was disturbed this past year because the TESTING that is required interrupted about SIX WEEKS of instruction. Part of it was because the state required the schools to test each grade separately (6-8) since the tests were not developed in a timely fashion. She did not teach a science curriculum (she teaches a foreign language), but her classes were interrupted by the TESTING. Meanwhile, she is required to teach ALL of the curriculum, even though her students were involved in the testing for so long. I can only imagine the interruption to the CORE classes such as English, Math, and Science. This type of interruption to instruction is OUTRAGEOUS, just for the purpose of TESTING. I don't think that most parents are aware of the effect that TESTING has on instruction. The state needs to find a more efficient and effective way to TEST. This is NOT acceptable!	9/25/2015 10:00 AM

50	The 6-8 standards need to be separated. Have individual standards for 6th grade, 7 th grade, and 8th grade. That way teachers know how to parcel the curriculum for each. Also, high school standards need to be based on the particular class. Biology, chemistry, etc. Every class for every grade needs its own state-written exam that covers just that year's material. If a kid bombs the MSTEP (currently just offered in 7th grade) do we blame the 6th grade teacher or the 7th grade teacher? Since the objectives cover 6-8th, what material is most relevant for the 7th grade MSTEP? Once I know, I will put the remainder of the content in 8th grade. A far better way to make objectives and to then test the teachers' success is to have YEARLY STANDARDS and every class in EVERY GRADE take a state written exam. In North Carolina these were called the EOG for all middle school classes and the EOC for all high school classes. For years in Michigan, the main feedback that I got on student preformance was the ACT. I need feedback EVERY YEAR for EVERY class. Please Michigan, stop trying to reinvent the wheel. Just copy the EOG/EOC format that North Carolina implements. Your system is not giving timely feedback.	9/25/2015 7:09 AM
51	These standards will help make michigan a great education state once more.	9/24/2015 8:51 PM
52	We do not want CCSS for our children in science or any other subjects. We want a PROVEN set of standards approved by parents. Our children are our responsibility to train and make sure they get adequately and appropriately educated. Educators and " professionals" are resources to parents and society.	9/24/2015 8:14 PM
53	I don't know why these standards are necessary. A one-size fits all curriculum approach doesn't fit all. If students don't intended to go to college to pursue a career that involves a science some of these standards are a complete waste of their time. Also why isn't psychology considered an acceptable course for science if the American Psychological Association standards are used? Why are there limitations on what is considered acceptable science courses? Science covers so many aspects that these standards are limiting. Limiting to students and teachers alike. It's a shame that our educational system is putting limits on education instead of expanding them.	9/23/2015 10:45 PM
54	Again, examples of what the K standards look like in action are needed. What will students be able to do, say, show that expresses they have the standard. Guidelines as to how to assess are needed. Explanation of the terminology is needed.	9/23/2015 1:05 PM
55	I'm quite knowledgeable about science, but unfamiliar with the Michigan Science Standards. Science is essential for the ability for our nation to be able to compete globally, as well as to produce a quality of living for us all.	9/22/2015 10:49 PM
56	The proposed Science Standards appear to be very broad and vague. They are NOT clear, nor are they coherent! Many of the standards seem beyond the scope of the typical high school level science class (eg. Create a computational model, develop a model...). The standards should be for ALL high school students, not just for those who are scientifically/technically inclined! The standards need to be realistic for high school students and attainable by high school students...ALL high school students (not just the gifted and talented).	9/22/2015 3:27 PM
57	I am disappointed that this is the best the Science Education community could come up with. Sadly, it represents a general waste of tax payer dollars.	9/22/2015 3:03 PM
58	So enthused and ready for the Michigan Science Standards to be adopted! Looking forward to hopefully have planning time to prepare to implement them fully, and hopefully school districts that are willing to invest in the technology, tools and resources needed to implement and provide our Michigan students with access to the best science educations we're capable of providing.	9/22/2015 1:05 PM
59	We need to see an improvement of content knowledge in the primary levels, teachers in that setting don't understand the content that they are teaching and it shows as students get into the secondary area. I think that we need to re look at how teachers are certified so that all students in secondary grades (6-12) have teachers that are masters in their content areas. Having primary ed teachers teach courses that they are not confident with just because of their certification, is not helping our education system. We need to push are teachers to know more so that they can hold their students to know more. We also need better explanations to parents and non-academic residents so that they know why we are changing to the Framework. We need more supplies to do more hands on labs and such to get the students the best science education as possible.	9/22/2015 12:56 PM
60	I could mark so many of the above items. Without clear benchmarks to teach, the "project" standards are extremely difficult to deal with. We clearly need administration support, time to work on getting ready, lots and lots of equipment, etc. The way the content areas have been recombined will really cause certification issues for teachers and schools.	9/22/2015 10:11 AM
61	6-8 is vague and unclear.	9/22/2015 5:35 AM
62	science and ENGINEERING. Science is a process of observations and theories. Engineering is a process of harnessing and developing solutions based upon those scientific principles. Guess which drives technology and innovation (i.e. our economy) further?	9/21/2015 10:34 PM

63	Adopting these Michigan science education standards will help make Michigan students more competitive for future education and jobs. Adopting these Michigan science education standards will help our Michigan students think more critically and be able to develop their science and technology ideas and skills better than the previous standards. Adopting these Michigan science education standards will help to align Michigan standards with resources being developed across the country - which will help teachers and schools be able to implement them. Adopting these Michigan science education standards will help re-prioritize science at the elementary levels and above - when all children need to participate in science to improve their lives and the lives of others.	9/21/2015 6:07 PM
64	While informed by national research, the Michigan Science Standards are also Michigan-made. They were developed through a multi-state process in which Michigan teachers and other science experts actively engaged. Michigan teachers support these standards. Where these standards are used to inform instruction, children love to learn science; this is what our classrooms should look like.	9/21/2015 3:07 PM
65	The standards seem to be all about applying knowledge, which is great and something we should absolutely be doing. But they seem to lack specific content targets. In the constraints of a real classroom - students, supplies, time - these standards would be very difficult to implement and take more time then is available in a semester or school year. Maybe make some of the standards based more in demonstration of knowledge at such a high level as is presented by the standards and some just content targets to teach. We have to find a balance between the two in our classrooms because of those real world constraints we are working with. They also have a lot of confusing jargon and could be stated in more concise terms. Also, are all standards required to be met for all students? Can we have high priority standards identified?	9/21/2015 2:42 PM
66	My biggest issue is for the middle school and high school standards....they only state what needs to be taught during those years It does not specify in what grade. It is not that big of a deal for high school because they all test in 11th grade, so they have 3 years to learn the material. Middle School there is a BIG PROBLEM. By saying all of those standards are for 6th-8th grade and not specifying what topics are taught in which grade makes it very hard, since the Science MSTEP is at the end of 7th grade. If a district chooses to teach topics in 8th grade (and that is how these are set up...for districts to set up what topics in which grade for middle school), what happens if those standards are on the 7th grade MSTEP? Then all of the students will miss those questions because they won't learn it until 8th grade. We NEED to know what topics to study for 6th and 7th grade so they can be prepared for the 7th grade MSTEP.	9/21/2015 12:37 PM
67	How will this align with the MSTEP?	9/21/2015 12:33 PM
68	Teachers should be required to have advanced degrees in their subject. "Train the teacher" activities are never sufficient. Passing regular and rigorous tests should be required.	9/21/2015 10:23 AM
69	Adoption of the Michigan Science Standards will help students develop a cohesive understanding of science, the enterprise of science and all of the skills associated with both. This is critical in the ever changing world. These skills transcend science and work towards a better ability to critically think and use informed reasoning for making decisions.	9/21/2015 9:40 AM
70	The testing of these standards are key. How will this be done? This has always been the weak spot in our State on content standards. Why have not had good data to support improvement. Also, what data will be gathered to correlate how students do on such tests to how well they do in college? That connection is key if that is what we are preparing them for.	9/21/2015 9:11 AM
71	I am concerned as a teacher who only gets $80 per year for supplies and students who don't have technology how are we going to keep up with all the districts that provide technology and have a large budget to buy supplies for their students. The new engineering practices require lots of supplies and I simply don't know how I'm going to keep up with such a limited budget. I feel the standards are written in a confusing way and there needs to be more specifics and lesson plan ideas before this is rolled out in expected to be used. I am happy with the standards we use now and have proper training and materials to teach them. I do not feel we are in need of switching at this time there is not enough funding available in education to make a switch. Since our evaluations depend on student scores I would want to see more simple question on how this would be assessed.	9/21/2015 6:20 AM
72	Not familiar enough to comment but I believe standards inclucing climate change need to be supported. We are living through the changes and our grandchildren will be suffering the consequences. Please give them the tools to survive and adapt to our changing world. We need to stop and prioritize and look to the future. We need to cease and desist our current destruction of our environment related to pollution and emissions.	9/20/2015 8:53 AM
73	Science can be a vehicle for all other disciplines at all levels.	9/19/2015 9:37 AM
74	These standards are based on decades of research into effective practices in science education. They need to be adopted because our students deserve to have the opportunity to learn science (and other fields) and we have a responsibility to provide them with the best instruction possible. The future of the state and nation depend upon our being willing to continually update and improve instruction in accordance with the results of research into what works in education.	9/19/2015 9:36 AM
75	I wanted to click more than 3. Teachers need to know the content and they need the materials for lab as the new standards are very hands on.	9/19/2015 9:32 AM

76	I was a supporter of NGSS with some reservations. From what I have seen of the new MI standards I am not convinced they are an improvement on the current HSCE's or the NGSS standards in their current form.	9/19/2015 6:25 AM
77	Again, the inclusion of climate changes and understanding how our environment works and interacts with every other piece of the environment is vital.	9/18/2015 7:56 PM
78	I strongly support the teaching of climate change as part of science in our schools and support that the NGSS includes climate change as part of the standards. There is strong scientific evidence demonstrating our climate is changing, what is causing those changes, and what is needed to avoid the worst consequences. Our schools need to teach students about climate change so they can understand the world around them and so they are prepared to address this problem as engaged citizens and in their careers.	9/18/2015 3:37 PM
79	The Michigan Science Standards, as developed based on the Next Generation Science Standards, but with components designed to meet the specific context of education in Michigan, are a good model or place to start in designing curriculum to meet the future needs of our societies. The focus on science practices is key, although it is also important to not sacrifice content, or more importantly, compromise the science behind the disciplinary core ideas. While the Fordham Institute assigned a C grade to NGSS, it is clear from all analyses that these and the MI Science Standards represent an improvement from what existed in the past. For example, the inclusion of data and evidence of learning progressions into current frameworks is a huge improvement. As a scientist who regularly interacts with undergraduates interested in STEM fields, I find these standards to be capable of preparing our students for future careers in these fields.	9/18/2015 11:55 AM
80	I think it's very important for our children to learn about climate change; their generation is going to have to deal with the consequences of what previous generations have done and failed to do. Their teachers should be adequately trained and supported.	9/18/2015 9:36 AM
81	The standards are not specific or measurable - they tend to generic. There seems little in the area of specifically what is to be understood. The basic building blocks do not seem to be there, There is no discernible tie between the standards and the outcomes of increased ability in engineering or scientific pursuits the standards are intended to target. There is little distinction in the development of the engineering realm as it progresses over the years.	9/17/2015 11:13 PM
82	please teach climate science.	9/17/2015 8:41 PM
83	I can only repeat my comments in #18.	9/17/2015 6:12 PM
84	We don't have a science standard the students in the inner city get screwed all the time by really you are hurting yourself.Who is going to take over when you retire Michigan school system hasn't prepare them it's scary to think about what will happen.Will it be ran by foreigners because, we know Asia,Australia, Africa and just about every other country has invested in their children education system?Not Michigan or the U.S period our politicians in Lansing are to busy getting paid and protecting big corporations,or their puppetmaster's.	9/17/2015 5:27 PM
85	I am not a teacher and do not have a child in the school system. I do know how poorly the US ranks in science education compared to other industrialized countries. I also know how religious extremism and money from wealthy donors acts to oppose science. This country can't afford to have science ignorant kids/adults.	9/17/2015 3:44 PM
86	We need to develop scientists for the jobs that are available now and in the future. Climate change is here. We need scienctists to save our planet.	9/17/2015 3:38 PM
87	Buy allowing gas and oil to continue there not showing good Sciene,there are other power sorses being ignored that are clean and better.	9/17/2015 3:09 PM
88	I strongly support standards for science, including climate change, in K-12 education.	9/17/2015 1:32 PM
89	Unless you get parental involvement, you won't get far.	9/17/2015 12:53 PM
90	I think it's very important that new science standards include coverage of climate change and anthropogenic global warming.	9/17/2015 12:40 PM
91	Teach as much as their heads can hold.	9/17/2015 12:17 PM
92	Students need to be aware of scientific finfings re: climate change and its important causes.	9/17/2015 11:46 AM
93	If you gave me a #4 I would add technology so the appropriate use of reliable information from electronic resources be taught and used in addition to curriculum resources and activities. I have not felt that textbooks are a absolute necessity. Other resources can provide significantly more in depth information. I applaud the updated inclusion of climate change and the impact for good or bad of human activity on the globe.	9/17/2015 11:43 AM
94	They should prepare the student to compete in various arenas in the real world. Therefore, they should reflect the physical, chemical, and biological realities of the real world.	9/17/2015 11:20 AM
95	Please make sure that science education includes a strong emphasis on Climate Change education, as this is crucial to future inhabitants of this planet.	9/17/2015 11:19 AM

96	I am unfamiliar with the Michigan Science Standards. If climate change study is not a large part of the standards, it is a serious gap. There is little time remaining to try to prevent the disastrous effects of the lack of action to learn about the causes and results of climate change. Our school must begin immediately to teach the truth about climate change. I support such efforts. Thanks for providing this survey.	9/17/2015 11:15 AM
97	As per above, I am concerned that climate science should be well represented in the new curriculum, as it is something that our students will have to deal with in their futures.	9/17/2015 11:13 AM
98	Earth Science should be placed as a Junior or Senior level class upon successful completion of physics, chemistry and biology. It is a natural cap-stone class that draws on content from all science subject matter and can only be taught adequately/sufficiently understood by students IF the sequence of Physics, Chem, Bio, then Earth Science is fulfilled. I strongly encourage the state to recommend this sequence to the districts statewide.	9/17/2015 11:12 AM
99	I am not familiar with the standards referred to in this survey but I do know that it is always better to go with scientific factual information than denial of the best facts at our disposal.	9/17/2015 11:08 AM
100	I support strong science education, including climate science education.	9/17/2015 11:02 AM
101	Critical thinking based on accurate information has always bee essential. Tell the whole truth !	9/17/2015 10:55 AM
102	I strongly support the inclusion of climate science in the standards! All kids deserve to learn the facts about climate change. Please do not water down the climate content in any way due to ideological pressure.	9/16/2015 9:20 PM
103	A massive effort will be required.	9/16/2015 2:54 PM
104	The real need is to scratch the whole Common Core program immediately and go with proven curriculum of which there are several in other states before the scam of bribing financially strapped states to turn on a dime from excellent programs to Common Core. Massachusetts appears to have an excellent program they rejected - where underprivileged students were gaining in test score and real progress. Ze've Wurman, a mathematician from California was involved in an excellent elementary program that was raising the underprivileged and immigration students (blacks and Hispanic) as well as the others. I have seen data reports on the CA program. The data is inspiring.	9/16/2015 11:04 AM
105	My priority is to establish a policy which allows for opting out of science education which conflicts with religious beliefs. The theory of evolution and the "millions" of years old earth theory conflict with my religious beliefs and I should be able to opt out for my child of these teachings.	9/16/2015 9:18 AM
106	Effective pedagogy is very important for teaching science, but I would couple that with targeted focus on students. It makes no sense to assert that the standards obliquely "prepare" students but don't take into account to which profession, class, or field preparation is directed. It's not enough to look at students an homogenous group and then declare students prepared, otherwise applications of "preparedness" run the risk of being arbitrary or based on personal bias depending on the preparer.	9/14/2015 2:12 PM
107	Need actual classroom subject matter being presented to students	9/14/2015 1:42 PM
108	These are very important to our students and to their future. Currently our science standards are not K-12 focused nor do they focus on scientific processing skills. Moving forward with these can only help support our students as they continue their education and become productive citizens.	9/13/2015 8:53 PM
109	With the numbers of students that move between schools, these standards need to be grade level not grade span. If middle school is 6-8 and the 7th grade is tested in the spring, what do I do with the 8th grade? From the document, Michigan K-12 standards science draft, I do not feel there is enough content to be able to prepare students for the task or performance.	9/13/2015 3:42 PM
110	Let's implement now! This is the way science should be taught!!	9/10/2015 8:53 PM
111	The 55,000-member National Science Teachers Association (NSTA) strongly encourages the Michigan State Board of Education to adopt the K-12 science standards as presented. The science standards are based on the Framework for K-12 Science Education that provides a cohesive approach to K-12 science instruction and strengthens the way science is taught and learned by integrating science practices with core ideas and crosscutting concepts. This approach will foster a deep, rich understanding of science and technology and support science, technology, engineering, and math (STEM) education. We are also pleased that Michigan science educators played a key role in the development and adoption process. For more information, please read the NSTA position statement found here:http://www.nsta.org/about/positions/ngss.aspx. The position statement brings attention to full scope of changes that will need to be put in place to support the implementation of new standards, including changes to instruction, curriculum, assessment, teacher preparation, and professional development, accompanied by extensive financial, administrative, and public support.	9/10/2015 3:36 PM
112	I do not support this. I will remove my child from public schools.	9/10/2015 12:47 PM

113	These poor, unproven and bias standards must not be allowed for one second to damage our children. They must be stopped and trashed immediately! There is a new bill in Lansing that will give the schools what they need; which includes highly rated and proven standards. It includes highly rated and proven tests. Support the passage of that bill and abandon this garbage. Teaching theories as fact?! NO WAY! Problems cannot be solved unless you know what the problem is. When holes are filled with false information - that possibility STOPS. **********This is educational malpractice. On top of Common Core ELA and Math, these science and social studies standards are the fastest way to continue the big increase in home schooling in out state.	9/9/2015 11:07 PM
114	I have been around long enough to see several revision of science standard for Michigan. For the teacher who does their job correctly these "guidelines" are not necessary. I am astounded that there is a continuation of the promotion of bad science particularly in the area or global warming and evolution. The science behind Global warming is very shaky and the "evidence" has been falsified numerous times yet this political topic continues to be pushed as "truth" that must be taught to the younger generations. These expectations concerning the use of evidence to come to a conclusion about a topic leaves only one option to be taught for it is named in the standard what the evidence is to show. That is not science that is manipulating the data to say what you want it to say. This particularly shows up in the standards concerning evolution. The use of uniformitarianism, embryology and natural selection as evidence for evolution have been refuted and do not fit the evidence. But according to these standards we must make the evidence fit these preconceived ideas. Sorry, these standards promote less thinking and more indoctrination.	9/8/2015 10:21 PM
115	All of the above priorities are extremely important. However, unless they are understood and accepted by teachers, administrators and parents, changes of improving the current framework are not as likely. However, it is essential to take time to introduce the framework, with focus on teaching science inquiry as a way to learn science. Of course, professional development and proper equipment are essential when the Framework is implemented. I look forward to seeing this happen.	9/8/2015 3:26 PM
116	The standards are specific for K through 5th grade, with progression at each grade level. At the middle school it is just 6th through 8th and teach whatever standard at whatever grade level with no progression. Is there a recommendation of standards at each grade level? Our school is going to a standard base grading system, are these the standards that we should use?	9/7/2015 9:24 AM
117	I was shocked to learn at the public comment session at CMU, that Michigan had 66 people work on the NGSS with 2 people as leaders. Why in the world then is Michigan only proposing the performance standards instead of adopting the entire NGSS? In my opinion, the MDE is not proposing the NGSS due to political reasons. The MDE is afraid of the public backlash that is associated with the Common Core. I am tired of my students and fellow teachers being pawns in the political game of education. ADOPT THE ENTIRE NGSS. If you are not willing to do so, then completely start over by actually creating our own state standards instead of cherry picking parts of the NGSS.	9/6/2015 7:26 PM
118	again seems ridiculous that this transition has to take place per grade level.	9/6/2015 6:37 AM
119	I hope that my comments in previous responses are considered, otherwise I am concerned that with these standards Michigan students will not be prepared for STEM careers and Michigan universities and businesses will have to continue looking out of state and out of country to find qualified students and employees for the STEM fields. I propose that most of earth and space science standards be taken out of the high school curriculum. This would allow time for more rigorous physical science standards to be added to the document.	9/4/2015 10:49 PM
120	I am EXTREMELY disappointed in the "life Sciences" area of the standards. The students learn NOTHING about themselves as humans until middle and high school. I am a Michigan Certified teacher with a background in biology, general science and health and I am appalled that basic life science information and skills are left out. 1. I believe the standards listed in 4th grade about the senses should be moved to 1st. Young people need to understand how their body takes in information and processes it so they can learn. At this age health/hygiene standards should also be introduced - hand washing, sleep, exercise nutrition. 2. In the 6-8 area a standard states: "Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells." Yet no where in the elementary standards is there ANYTHING related to what a system is. Fourth or Fifth grade should include standards related to understanding the human body systems. Fifth grade shouldn't just include a standard about an organisms food ultimately coming from the sun, but should also include standards related to nutrition and the digestive system and how the body receives the nutrition from the food they eat and the need for exercise. 3. The middle school and high school standards should also include the impact of stress on the body and appropriate ways to handle such; and include some substance abuse prevention standards. **** There is no Health curriculum in elementary schools. Students need to learn about the human, safety, nutrition, exercise, germs, hand washing, tooth brushing, sleep, handling stress, etc. IF they don't learn this in their science units in school when/where are they supposed to learn it? I am disappointed all this extremely important information about taking care of the human body and how it works has been dropped. It's much more important than weather, wave models or even the solar system. Its important they learn about themselves and their bodies and taking care of them and keeping them healthy. After they learn about themselves they can expand to their world and universe. I hope you will consider putting some of this back into the standards. Thank you	9/4/2015 4:57 PM

121	I like the MSS to a great degree, however, there are concerns that I have upon the adoption of these: Most science teachers that are in the work field have an area of expertise (Chemistry, Biology, etc..) and these teachers do a great job in preparing the youth in that particular area. Based upon the expectations of the MSS, as per my discretion, the teachers are going to be asked to teach each and every level through an 'Integrated' format as well as adding the 'Engineering' angle to their instruction. How will the 'experienced' teacher incorporate such integration without an extreme amount of additional studies? Us educators are already raked quite thin with all of the additional loads put upon us (documentation of accommodations for challenged students, meeting criteria outside from that of teaching, etc..). I understand that there will be resources for teachers to utilize, but where is the time going to come from for this research? Has 'Team-teaching' been considered in aims to apply the MSS? This would give the opportunity for 2 teachers of different areas of expertise to work with a given class at those particular 'integrated science' standards.	9/4/2015 3:07 PM
122	We really need to sit back and identify what students can actually do at each grade level and what is really possible for teachers to do. Realistically, our students are no different emotionally and developmentally than those kids on GREASE. Today, there are more stresses than ever before, and yet, we are forgetting that these kids are human and the brain only allows so much at certain ages. I feel as though we are asking students to speak a language and apply it, without knowing it. We are creating even a larger problem and pushing more students away from science. We look at research, but everything we do could be justified by the right research. The Science Expectations and companion documents allowed us to identify what had to be taught. After implementing all of the concepts in a new trimester schedule, we realized that it could not happen. We have taken our curriculum down to all essentials and a "few of the extras" based on time constraints. Because of our schedule, I now have 10 weeks to teach half of chemistry as identified by our common assessment. I also teach summer school. Even though it is only 2.5 weeks, but very long days, I work and teach some of the most difficult children chemistry. I make connections with them, I have time to develop their weaknesses, and they truly learn. I have time to do all of the labs and delve into deeper learning since I don't have to deal with all of the other stuff and worries of the regular school year. I am trusted as a professional to get these students to learn and to develop their ability to think and problem solve. It is extremely difficult to make this happen during the regular school year. I am truly supportive to developing deeper thinkers. I have changed my teaching drastically over the years,; hopefully for the better. I have also refused to change certain things for I could not see how that helped the kids learn my specific content. I receive many thank you notes from students when they go to college, saying that I have prepared them to be successful. PLEASE look at what we are expecting of children and what they truly need to be successful in college. Have you looked at a college chemistry curriculum lately and what they are doing? Many students leave engineering and medicine for the general chemistry weeder classes are too difficult and require much more content base than we can deliver in a regular chem class at the HS level. Should we not look at the entire educational system and society, create more realistic expectations for each grade level, stop entertaining students with tech toys and constant projects where only the strong get stronger, create chemistry and math classes at the college level that teach the students and don't try to separate the strong from the weak before they have a chance to learn. If we want more people to be successful, we need to change what we do all the way around. We are expected to teach to each and every child at our grade level and believe that all students can be successful. If the USA wants more people who are able, we need to change our approach and not push people away. We need to build the foundation so that they can. We are expected to do this with limited resources, under major time constraints, in a class of 32-33 meeting all of the needs of 4 - 14 special needs/504 kids while making sure we are meeting all of the 5D evaluative demands. All of this looks great on paper and sounds good, but is it real? Is it truly what is possible and what is best for kids? What are the cognitive demand limits and have we taken them into account? If our kids can draw radioactive decay, but have no idea what it means, what have we accomplished? If the lower levels do everything on computers and only do projects, how are we expected at the high school to teach concepts and truly prepare them for what they need to do in college so that they can be that engineer?	9/4/2015 10:13 AM
123	Pedagogy, planning time, and materials will be the teacher's first concern. Elementary teachers will be concerned about content as well. Middle and high school teacher will know content well. Planning and transition time will be pertinent. Districts need to determine course models and look over how things will move and change. Then, the teachers will need to be supported in implementation of the new pedagogy. It takes time to transition a classroom into a more student centered learning environment where the teacher facilitates learning rather than directly teaches a lesson. A support network is helpful for this transition, which is provided online by many professional organizations for science.	9/4/2015 9:18 AM
124	I like the progression beginning with kindergarten. My concern is how long will teachers have to make this shift.	9/4/2015 7:40 AM
125	These standards represent an important step forward in improving the teaching and learning of science in Michigan.	9/3/2015 3:54 PM
126	I have little to no budget to buy any type of supplies because everything is on a budget. The focus on making learning more hands on and incorporating technology is expensive. School districts need more funds for science. I would also like to see the state suggestion textbooks or activities that would be structured to how they will be tested.	9/3/2015 3:04 PM
127	I dislike the fact that content areas are shifted from one grade to the next. Most of the materials I have for fourth grade science will now have to be given to the third grade teacher. I would like to see implementation strategies for school districts with minimal to no science budgets so that I can adequately teach the content. We currently have no textbooks or supplemental materials and no money for a science budget. Providing ideas for implementation / curriculum guides is something I feel is absolutely necessary in order to teach the standards with what I am given.	9/2/2015 4:46 PM

128	content should be looked at why it was included. Digital communications in the physics curriculum seems random and unnecessary	9/2/2015 1:25 PM
129	Many of the the standards are vague and unclear as to what is needed or expected as far as content and skills. It would help if there were clarifications and examples to go along with the standard.	9/2/2015 10:54 AM
130	Elementary levels necessarily focus on math and reading leaving little room for science. This starts students behind peers in other nations. Cuts in funding have gutted resources for the type of hands on learning being emphasized.	9/2/2015 10:01 AM
131	I feel it was a weak attempt at integrating the next generation science standards to include engineering. I understand we are trying to get students to develop and conduct their own experiments but they still need to know the content to be able to do that. These standards are too vague to be useful as a guide.	9/2/2015 9:26 AM
132	This framework represents a general broad curriculum that does not include the necessary framework for learning higher level concepts. From k to 12, there is no defined progression of knowledge in any of the science disciplines. There is only a random scattering of concepts and ideas with no foundation to build upon. This is the fourth change to curriculum that I have dealt with since beginning my career 14 years ago. We have yet to adopt a state curriculum that makes sense...we are constantly changing so how do we know if anything works.	9/2/2015 9:05 AM
133	I am excited about the prospect of MSS adoption and the further development of the curriculum around these standards!	9/1/2015 7:58 PM
134	I feel that the Michigan Science Standards place the focus on developing skills that are applicable to everyone. The ability to problem solve is something is a part of every profession in some shape or form. The Michigan Science Standards address science content in a way that allows students to develop these skills while learning the science content.	9/1/2015 6:55 PM
135	There is little guidance in the pathway that teachers need to take in order to get to the performance expectations. These standards are a grossly unfunded mandate. The State needs to decide what they are going to do, and then implement their plan. We have been in a holding pattern for three years.	9/1/2015 4:08 PM
136	The original NGSS standards also include ties to the Nature of Science. These are an important "4th aspect" in addition to the main framework of Science and Engineering Practices, Disciplinary Core Ideas, and Cross-cutting Concepts. It is very important that the Nature of Science connections remain in the standards and are made explicit. Research shows that students do not learn about Nature of Science implicitly. The instruction must be explicit. Furthermore, increasing a persons understanding of Nature of Science has also been shown to improve their critical thinking skills.	9/1/2015 2:50 PM
137	Does anyone else see this as a complete waste of time? HOW are these standards any different from the National Standards? Thank GOD I pay taxes so that we can afford to do this....	9/1/2015 2:46 PM
138	Access to appropriate resources should be a given, and not something that should be at the mercy of prioritization.	9/1/2015 2:46 PM
139	Please stop changing them and give us time to develop resources that support them. We are constantly changing curriculum and don't have enough time to develop good resources and collaborate with our colleagues.	9/1/2015 1:39 PM
140	Stop changing the standards and testing so much...Allow the science performance to be measured by a presentation to teachers not a state test...	9/1/2015 1:38 PM
141	Please be more specific on how you want these standards interpreted.	9/1/2015 10:37 AM
142	See above comments	9/1/2015 9:19 AM
143	Very ambitious document. Never enough time to adequately implement. A quick guide or key ideas would be helpful.	9/1/2015 9:19 AM
144	I believe that at the Middle School level, these standards are feasible. However, the feasibility will ultimately depend on the ability to fit science instruction into the elementary school schedule. It is unfortunate that elementary students are only exposed to science curriculum once or twice a week.	9/1/2015 9:17 AM
145	MoreTime Professional development Scope and sequence for high school expectation	9/1/2015 9:01 AM
146	I strongly support the states adoption of these standards as providing an appropriate framework for teaching students about science and how to solve problems which are valuable skills in life and in the workplace.	8/31/2015 9:10 PM
147	Science should be integrated into other subjects. It should be project based and FUN for kids of all ages. We have done a terrible job of teaching science over the past 20 years. My kids loved science but were bored with the instruction given. It was mostly textbook based and not very exciting. We can do better. I have been on School improvement teams where the administrators are happy with dismal low scores because they were ahead of the even more dismal state wide numbers. It is a shame. We need to drastically improve our science instruction and make it technology based, not textbook based. Experiment based, Schools have no money for kits and project based learning. We need to make it a priority.	8/31/2015 12:51 PM

148	Top priority is parental support. I entered science only because my parents were vocal supporters of science education in our school district. But then I received my elementary education in the post Sputnik world - there was great incentives for science/mathematics education. We need teachers with a science background trained as instructors. Although I do not teach my experience in science would bring a high degree of first hand experience to the classroom that no teacher of science can generate.	8/31/2015 9:58 AM
149	The teachers will need example lesson plans with student specific content and technology / lab resources to implement the new standards.	8/31/2015 7:54 AM
150	The term model is used throughout the standards but it is very vague. In some cases models already exist for that concept and we don't want students just doing internet searches to recreate a model that already exists. In other cases it seems like the word model is just being substituted for a less active verb in an attempt to make the standard seem more inquiry based. If we just substitute verbs without thinking through how a model might be accomplished by students than many teachers will just return to their former ways of teaching.	8/30/2015 3:06 PM
151	Present 'standards are well-selected and presented. But clarification in the students minds distinguishing between Empiracal (repeatably testable) and Non-empirical (physically untestable) forms of "science" should (must) be further emphasized.	8/29/2015 3:24 PM
152	Many high school standards would not fit into existing courses. There appears to be an assumption that science and engineering are not separate disciplines. It will take years to restructure the science curriculum in most districts. Ideally it would be rolled out over 12 years beginning at first grade with teacher training prior to this. However, changes in legislature and lack of adequate funding preclude those.	8/29/2015 11:03 AM
153	Way overdue. There needed to be new standards since Michigan's standards compared to other states are outdated and we are not science or STEM leaders. MIchigan has slowing been decreasing real thinkers and making students list and memorizing facts. Because these are watered down versions of NGSS, I find that there will be more educators confused about how to teach this. Will there be a companion guide or bullet points to help with what th specifics are under each Standard? It seems that they are vague in details but require a While I like the freedom to approach a HS biology course more constructively, I am not sure how the state will test these - which is unfortunately how we have to teach in Michigan now. Some of these model ideas for the students look good but when you read the content - there is a reaction that sums it up- I think HS students would find this counter productive and a waste of time. For example: HS LS1-5- Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy. There are very concise diagrams showing the leaves taking in sunlight and storing energy as ATP. I was excited when the NGSS came out and have used and seen what other states are doing to develop curriculum with NGSS. I caution with these standards since they are not being correlated to NGSS that you are leaving teachers with out the tools and time to develop good lessons to implement these. If I am to use the new MI standards as they are written - I would look to NGSS and PBL questions to have them model and construct in specific scenarios and contexts. Again time and resources are going to be needed.	8/29/2015 11:02 AM
154	I am hopeful and modestly optimistic. I'm worried about low income and minority districts that may not have the materials and optimum class sizes to teach science successfully.	8/28/2015 8:34 PM
155	I fully support the new science standards, but the state MUST PROVIDE FUNDING for lab materials and resorces for both students and teachers.	8/28/2015 4:26 PM
156	I am a chemist who has worked for a large, science-based company, and a parent of two children who were educated in Michigan public schools. One of these children is now a college-level educator in Michigan and the other is an aerospace engineer. From my observations of STEM education in Michigan in the past, I think that the focus of the proposed Michigan Science Standards on a coherent, K-12 framework is extremely valuable and will serve both the students and Michigan well. Students that move between schools in Michigan will benefit from consistent standards, and the State as a whole will benefit by the increased understanding of science by all citizens. I think that the incorporation of scientific concepts, engineering principles and a hands-on observational approach in general are immensely important. The Michigan Science Standards do this very well. In addition the Michigan Science Standards provide important treatments of specific concepts such as evolution and climate change, which are very important for all citizens to understand. These scientific understandings are important to learn as they have been developed by the skilled scientific community, and not muddled by political and ideological concerns. The proposed standards are a sound and thorough framework to use in teaching our children about science, engineering and math principles and specific core ideas in the various science disciplines.	8/28/2015 11:16 AM
157	In order to move forward in a cohesive way, we need three things to happen: (1) We need a solid decision to be made regarding the approval of the standards. (2) We need formative common assessments to be created that mirror the state testing items. Setting the targets for teachers and students is critical to achieving strong results. (3) We need a timeline for having state assessments in place.	8/28/2015 9:04 AM

158	Teachers are going to need time to learn new material and curriculum, and the state should provide districts in need with funds to purchase lab materials, and texts on these new topics. Teachers also should get training on the new standards and be given sample items and performance task examples. More state provided supplemental materials and companion documents would be helpful to help guide teacher instruction. Similar to MC3 that is in Social Studies, especially for the Michigan specific topics.	8/28/2015 12:30 AM
159	I especially want Michigan students to have a strong background in evolution. It is the underlying basis of all biology. These standards go a long way toward that goal. Having some experience with creationists, I suspect these standards will not be acceptable to them. The idea that humans and chimpanzees share a common ancestor is especially difficult for many creationists to accept. I have done some reading and research in this area. Fossil evidence, in my opinion, is weak, but recent genetic evidence leaves no doubt that we share the same primate ancestry. The pattern of Alu elements (a type of retrotransposon mutation) found in human and chimpanzee genomes indicates overwhelming evidence that both species inherited genetic material from the same ancestors. This evidence is complex, but it could be simplified for high school students--and, perhaps more importantly, for their creationist parents. While no evidence will change the minds of committed creationists, the Alu genetic evidence could help creationists understand why science teachers are so adamant about including evolution in the curriculum. Scientists support evolution not because they are all atheists, but because genetic evidence leaves them no other rational option. I urge the adoption of these standards. I hope sound scientific reasoning will underpin the decisions of those who must adopt these standards.	8/27/2015 8:47 PM
160	I think that it's great that the new standards have synthesized the material to be taught. There appears to be less content. But, my fear now is time. Standards are going to require more time to implement, especially ones that ask student to create an investigation and to carry it out. Where are materials going to come from for these investigations? I also am uncertain how the state is going to test for understand. These standards do not lean easily towards a multiple choice answer testing that is the M-Step. So what is the M-Step going to look like once the new standards begin?	8/27/2015 6:24 PM
161	Overall, the content of these proposed standards appears very strong, but I worry about the amount of scientific understanding they will implement when the emphasis appears to be on the scientific knowledge which is often easily forgotten or often unnecessary for students not continuing into STEM fields. I feel like the better the children understand how science works and how to ask questions, and find answers, the more students will stay scientifically literate and more would pursue STEM fields, and overall be more successful in higher level science classes.	8/27/2015 2:15 PM
162	All teachers who teach science need to attend training for the Michigan Science Standards.There is a shift in practice for these Next Generation Science Standards.	8/26/2015 8:36 PM
163	Again most of my content has been moved to other grade levels. I have become an expert in these areas, bought materials out of my own money, and have spent a lot of time collecting materials for my old content. There are holes not all topics are met. The moon, planets, etc are one example.	8/26/2015 2:48 PM
164	Teachers will need access to two important things, 1) curricular materials specifically designed around the new standards, and 2) appropriate professional development to learn to use them. Of course teachers need to know the content very well, but if they don't we've got a problem in the preparation/placement areas, which doesn't have anything to do with the standards.	8/26/2015 2:09 PM
165	Science literacy is an essential part of education. Moving ahead with these standards will create a much richer and integrated learning environment for students. Scientificconcepts are great motivators for students to learn higher level and critical thinking skills. Let's take the time and resources to help science educators at all levels learn to teach science in a more meaningful way.	8/26/2015 1:39 PM
166	Teachers will need additional support and training around the three dimensions of learning, and the engineering aspects of instruction. The draft document leaves out the articulations, connections to the common core, and the explanation of the 3 dimensions of learning for each standard, which are essential to understanding the standard. I hope that these will be included in the final draft.	8/26/2015 11:00 AM
167	PLease clearly communicate intentions for assessing these standards at the state level. Assessing practices (with content providing context) would support transition.	8/25/2015 10:37 PM
168	Our district is anxious to transition to the MI Scl Stds (NGSS). Teachers want assurance that when the new standards are adopted, state assessments will no longer assess the GLCE and HSCE content that is not represented in the NGSS.	8/25/2015 9:57 PM
169	I support the MSS, but would rather use the NGSS as written, including all supporting resources developed by the writing and review teams.	8/25/2015 9:40 PM
170	The proposed science standards are particularly well-designed to emphasize evidence-based learning, particularly for the topics of climate change and evolution. Both have become controversial topics in politics as well as pop culture, but in reality are extremely well-studied topics with a wealth of data describing them. It is essential that science education remains evidence-based, which is the most important tenet of science.	8/25/2015 8:03 PM

171	The standards need to be grade specific. MI ran into this problem before the GLCE's. The state can not have 6-8 standards, they must specify for each grade. If statewide assessments are involved, then each grade must know. It can't be left up to districts because that leaves holes in curriculum. In addition, way to many students transfer to other districts each year and they either repeat a topic or miss something all together. Yet schools and teachers are held accountable for these students. Not good - get rid of 6-8, make the standards grade specific!	8/25/2015 4:19 PM
172	Regarding Q21, I would like to check more than 3, because I think we need a multi-pronged approach to really change the way science is taught in our state. My priorities would be: - improving teacher knowledge of science content AND PRACTICES (including scientific and engineering practices) - increased administrator support for science education TO ENSURE adequate time for science instruction in schedules AND to provide dedicated planning time for the transition AND targeted PD. - appropriate access to curricular materials and lab supplies (to work toward the INVESTIGATION stance highlighted by the draft standards) The integration of disciplinary core ideas, scientific and engineering practices, and crosscutting concepts is crucial for our youth to be positioned well for future learning and professional growth. This must start in the early grades (in kindergarten!) in order for the foundation to develop the way the Framework depicts. I hope the state will develop a supportive transition plan and that districts will work to develop or identify curriculum materials that can provide the necessary support for teachers.	8/25/2015 3:52 PM
173	In the elementary schools, trade books alone are not enough to teach science. Textbooks have more information and students need to learn how to use these resources. More importantly, students need these textbooks IN THEIR HANDS...having online access only is not enough support for elementary age students. They need to be able to take home a book to study and review information that was presented in class. Teachers at all levels need access to supplemental information and videos to support the curriculum. Educators need to be made aware that compassion should be a part of learning about animals, and that there are alternatives to dissection or using live animals in the classroom. Those alternatives need to be provided and encouraged and made more mainstream.	8/25/2015 10:19 AM
174	I personally think that a tweaking of the current standards would be better for Michigan than switching to this new confusing set of standards. We just need to reduce current standards and add in new ways to get more inquiry and engineering. I do not agree with adopting these new standards. If the state moves forward with this switch it is important to note that this is a large change for science teachers. It would be nice for the state to provide resources to help teacher these new standards. It would also be very helpful to see sample assessments. A large assessment item bank for all grade levels and all science content standards would be a great.	8/25/2015 5:55 AM
175	With the adoption of these new standards comes the grim reality that the necessary funds to support such a move couldn't come at a worse time for Michigan districts! To make matters worse, when you talk with local business leaders and share the vision the State of Michigan is painting with this new curriculum paints an even more grim look at educational initiatives. We are not preparing our students for the future, but preparing them for the past. The vague nature of these standards will only create more problems for current and future educators. The vague language leads to the development of standardized tests to really point to public educations inability to educate kids, rather than teaching our kids to think, collaborate, and to perform real-world investigations, which is far more applicable than learning about things the vast majority of our students will never see/use outside of a standardized test! It's a nice try, but a failed attempt at trying to do what is best for kids!!!	8/24/2015 7:45 PM
176	Materials to build these new units needs to be addressed. Districts do not have extra money for the changes of content that is required to implement the standards. When a teacher is allocated $130 for classroom supplies for all subject areas for the classroom how is an educator suppose supplement with the changing science standards? Making sure pencils and other supplies are first priority and then what ever funds are left over will go to science and the other curriculum areas.	8/24/2015 4:27 PM
177	Teachers will need more support with resources as many of the standards are "Developing Models". Effective ways to model the standards are often not consistent or are difficult to obtain. Standardized tests do not test use of models so a clear way to connect those activities would be helpful for teachers	8/24/2015 11:13 AM
178	The chemistry content in these standards seem weak and doesn't adequately reflect what students should know after completing a chemistry course. I am curious how colleges and universities view these science standards as preparation for their programs.	8/23/2015 1:14 PM
179	I wish that there was some guidance as to what should be taught in each grade 6th, 7th, and 8th rather than the vague middle school standards that cover all three. I feel like my administrators and other teachers keep changing from year to year which standards are taught in which grades and it makes it hard to improve instruction when everything is continuously new. Thus, I would like to see grade specific standards at the middle level in order to avoid confusion.	8/23/2015 11:46 AM

180	Coming from the age when specialization was the basis of ones teaching credentials, I find the continuing tend toward 'general science' teaching at the middle to hs levels disconcerting. The 'teach a little of everything' approach is fine in elementary grades, but even there, teachers will shy away from topics they do not feel they have a strong background. Over the course of K-5, with the right balance of teaching strengths, students can get a balanced science education. Having middle and hs teachers with a 'jack of all trades' certification does not adequately prepare the teachers to teach or the students to continue learning science topics in the depth needed in higher education. I see us spending more and more time testing and documenting standards and less and less time learning how to teach and broadening our own educational goals. Again, without properly funding public education, proper support of teaching as a profession, protecting teachers from constant attacks that undermine their ability to view teaching as a respected profession, and a commitment to properly increase educational funding forward, we are patching holes in a sinking boat while proclaiming 'all is well, all is well'.	8/22/2015 10:56 AM
181	I find the entire K-2 standards lacking for content in each of the content areas. Overall, I feel that this is a very short list of standards for each grade. I specifically looked for things that I know younger children enjoy, have little experience with before school, and things that are meaningful to them. For example, life cycles(learning about animals, their changes, and their young), plants(plant parts and plant growth), and magnets(their properties, and the sheer hands-on enjoyment in the classroom). I am disappointed.	8/22/2015 10:49 AM
182	My school district does not supply my special education students with any text books or materials to teach science. We spent time creating assessments, making I CAN statements, but are not given any resources or training. We have no training or money for professional development in this area. Wayne County RESA never helps with instructional training in this area for special education teachers. I often wonder why I bother teaching it. My supervisors don't seem to care, as long as I show student test scores improving	8/22/2015 7:58 AM
183	As I mentioned in my previous comment, the cross cutting concepts and science and engineering practices are crucial to the success of these standards. I am fearful for their removal from the pages with the actual standards.	8/21/2015 11:43 AM
184	Strong foundations in science cannot be formed without time in the classroom dedicated to the instruction and practice of science. Science practices must be taught as an integrated practice which uses math, reading, and writing. We can no longer neglect STE in favor of the "3 R's".	8/21/2015 9:14 AM
185	Love the standards! If implemented correctly, they will make a huge impact on our students' science ability in Michigan.	8/21/2015 9:12 AM
186	Many teachers lack the needed supplies to teach an experiment. This means in order to teach the lesson, teachers need to purchase the materials for their students. This is a difficult task and needs to be budgeted for in the basic supply funding given to classroom teachers.	8/21/2015 9:11 AM
187	Most of them sound great, however districts that don't have the resources have difficulty using them,	8/21/2015 9:09 AM
188	Again smaller class sizes would result in the most improvement!!	8/21/2015 9:07 AM
189	I'm very worried that state-level testing will focus on content and not align with the performance expectations of the	8/21/2015 8:54 AM
190	The standards look pretty user-friendly and should not be a problem to implement.	8/21/2015 7:33 AM
191	Do not like the engineering standards.....seem too difficult and confusing. 3rd grade learning about weather and the seasons? Too easy	8/20/2015 10:52 PM
192	While I think the format of the standards is cohesive and clear, thinking about how to teach them is less clear. This will require new curricular materials, at a time when extra money is scarce in most districts, and a total reformatting in some grade levels. Training would also be essential. As we move from "know" standards to "show" standards, it would be extremely helpful to have professional development that explains how best to help students in this manner. I'm also concerned when I look at these about creating units. Sometimes there are only one or two standards that fit together in a grade level. Do we make a unit out of only two standards? It feels a little bit like we're jumping all around. Clear direction, training and resources for new materials would help make this transition feel more doable.	8/20/2015 10:18 PM
193	Many educators, community supporters and or interested people have contributed to the development and review of the Michigan Science Standards. These standards were not developed quickly or without considerable thought, research on best practices and effort. Many educators are actively practicing components of standards because they have seen the value and benefit to students. It is in the best interest of the students in the state of Michigan to adopt these standards and a plan of action for full implementation.	8/20/2015 8:05 PM
194	We just implemented the Battle Creek science units at my school. They have been very beneficial to our science program. The kits do not follow the new grade level standards. They are more geared to previous standards. I am concerned that if the new standards are adopted our school won't have the resources to implement them.	8/20/2015 5:16 PM

195	I am pleased that Earth and Space Science standards now represent approximately 33% of the standards at ALL grade bands in the proposed Michigan standards. It must be made clear to all districts that there are SEPARATE Earth and Space Science standards for both the 6-8 and 9-12 grade bands...and that districts should not ignore the 9-12 band, nor push the 9-12 band into middle school together with the 6-8 content. There are organizations that are capable of inservicing all Michigan educators who are deficient in Earth and Space Science content. I know that MESTA (Michigan Earth Science Teachers Association) and MSTA (Michigan Science Teachers Association) are both qualified to bring Michigan's educators up to speed if enlisted to help.	8/20/2015 5:11 PM
196	Specific vocabulary terms would be useful Examples of how these could be assessed would be useful Need more specific content: what exactly is the content and vocabulary for each unit?	8/20/2015 2:32 PM
197	Development of assessments will need to align with standards AFTER they have been implemented. Teachers and administrators will need to devote appropriate support; curricular, lab materials, and technology resources; as well as adequate time for planning and carrying out science instruction. Parents also need to be informed how to best support science education.	8/20/2015 2:19 PM
198	Getting the supplies and materials for the change in curriculum will be our greatest problem. I need the activities easily available.	8/20/2015 12:12 PM
199	Please stop putting so much emphasis on assessing the students. Teachers should be allowed to qualitatively assess the students individually - too much time spent testing, which is unnecessary in Science. Let the kids DO things!	8/20/2015 10:56 AM
200	These standards are wide open meaning they can be interpreted differently by different people. Concrete example should be provided along with standard to provide guidance and level of difficulty.	8/20/2015 9:50 AM
201	The Proposed Michigan Science Standards are Michigan's best chance at closing gaps in science and math.	8/20/2015 9:41 AM
202	Some administrators are placing science teachers in assignments that do not best fit their certifications and experience. This will directly effect student outcomes and may show teachers are not effective when this is something out of their control.	8/20/2015 7:59 AM
203	I do quite approve of the more hands-on and data driven approach to the Michigan Science Standards. Students focusing much more on steps of the scientific method within their studies of a science discipline increase their awareness of science in the larger scope of the world around them. Hopefully, future assessment at all levels, which should also be more project based, will also receive encouragement for implementation. However, I see a gross oversight both in the NGSS and Michigan Science standards in regards to standard 5-LS1-1 at the 5th grade level which states: "Support an argument that plants get the materials they need for growth chiefly from air and water." No where else in the 5th grade science standards do I see the role of "soil" as a crucial symbiotic part of the plant/soil relationships. Not stressing, even to the point of discounting the importance of this relationship by leaving it out of the standard, nay, the wording seems to quite exclude it, is perhaps a dangerous trend. I do understand the notion that plants surviving in a hydroponic state is an efficient mode of farming, especially in more contained areas. However, for most of the history of plant biology, soil, and all of the ecosystem involved in it, has been the vital medium that plants have used as a development strategy to survive and thrive throughout much of the planet. One only has to look at the ecological disasters of soil degradation, in its many forms and the present problems of the over-use and mismanagement of fertilizers in water systems throughout history and around the world to see how important it is to stress soils role in plant and environmental biology. Also their are countless historical instances where improvements in soil/plant management have restored and supported human communities as well as local ecosystems. An excellent example might be the new research on the relationships between fungi like Mycorrhizae in the role of plant interaction, such as illustrated by the articles below and could be considered as a way to show the interconnectedness of biomes and transfer of energy within ecosystems. I know my students find such a more integrated understanding of their world much more fascinating and fulfilling. http://www.bbc.com/news/science-environment-22462855, and van der Heijden M.G.A and Horton T.R. 2009. "Socialism in soil? The importance of mycorrhizal fungal networks for facilitation in natural ecosystems". "Journal of Ecology" 97: 1139–115.	8/20/2015 3:11 AM
204	I believe that the more standards that come out limit my ability to prepare students for college in physics.	8/19/2015 10:38 PM
205	I am very concerned of the developmental appropriateness of content assigned to specific grades levels (K-5 specifically)!!!	8/19/2015 8:32 PM
206	Michigan educators have supported the development, analysis, and implementation of these standards since they were released in 2013. Adopting the standards will allow MDE to get out of the way of implementation, but ending the state level assessment of previous standards and choosing instead to assess at the state level, only standards common to both GLCE/HSCE and the Michigan Science Standards (NGSS).	8/19/2015 8:32 PM

207	The practices are great. The emphasis on earth science is over kill. We have to prepare students for college and most will take either chem, physics, or bio at the next level. By reducing the content expected in chemistry and biology we are setting our students up for failure at the next level. The graduation requirements don't match the content. bio, physics or chem and a third year. So, if a student elects to take chem and not physics then they are lacking background knowledge for the science assessment in the junior year SAT/MSTEP. This is a problem for students and teachers. The best way to show growth in the content areas of bio/chem/phys/earth would be to have end of course assessments. Make a bank of assessment items that can be pulled down into the course at the local level. A district would be responsible to assess pre and post during the course. The course may be any configuration that is why the bank of questions must be flexible and usable to match the local level. The state can establish a filter that ensures the district is measuring all standards and then we can get rid of the MSTEP.	8/19/2015 7:35 PM
208	Enough with the testing. Kids used to love science. The tests suck the joy out of science. I have spoken with teachers (one who was a National Merit Scholar) who have said there were questions on the test that they were unsure which answer was considered correct. They knew what the answer should be and it wasn't one of the choices. I am sad that my children are not experiencing the joy of learning and instead are experiencing the stress of standardized testing.	8/19/2015 7:08 PM
209	As much as I think the chemistry HSCEs were too much to teach, I think these new Michigan Science Standards have gone in the opposite direction and are too little. Yes, these (and the NGSS they are based on) deal more with cross-cutting concepts, but how will these prepare a student for AP Chemistry or college-level science coursework? (Where's the stoichiometry?) And then, there's the ultimate question: how do you assess these, especially in a standardized way? (I don't think it's possible.) I went to a workshop this summer, led by the American Chemical Society, on writing NGSS-style assessment questions, and even they admitted it's very difficult to do. Writing science and engineering practice questions is very, very hard. The College Board has now had two years of writing new AP Chemistry questions where they have tried to incorporate their science practices in, and test scores have gone down. And the new AP Chemistry curriculum spells out what should be taught! These new Michigan Science Standards don't really spell out much. And what happens to chemistry teachers like me? There's not enough chemistry in these standards. Does a stand-alone chemistry course go away and just become a unit of a Physical Science class? What about all of us with chemistry certification? What happens to us? The state has ruled that those of us that did not formerly teach Physical Science can no longer teach it. (I did teach it before the cut-off, so I am grandfathered in.) These standards again support Michigan's "jack of all trades, master of none" approach to science teacher certification; those of us with degrees, majors, and minors in a science subject struggle to find positions while those who have DX/DI (general/integrated science) certifications, who have taken maybe one or two courses in each subject, can teach absolutely any middle or high school science course, including AP science courses. Mastery of content in Michigan is not wanted. The absolute opposite of Highly Qualified is wanted. And these general science-heavy "Michigan Science Standards" are just another nail in the science content specialist's coffin. These proposed standards, if adopted, I would hope would force the state to change the high school graduation requirements to three real years of science, the three proposed in the standards (Physical Science, Earth/Space Science, and Life Science), so that our kids are actually tested on what they are required to take. Now, a kid takes a year of Biology, a year of Chemistry or Physics, and a year of CTE (since counselors suggest kids to not take a third year, since science is "so hard"), so they only have two of the four sciences they are tested on. No wonder our kids do not do well on the state science tests! I do not look forward to teaching these standards, but just like every curve ball thrown at teachers these days, I'll make it work if I have to. In the end, science teaching is fun!	8/19/2015 6:43 PM
210	We have been working on aligning our course (biology) to NGSS, which this is really close to. What I don't really like is how after 6th grade, the standards are combined. I think information on what type of science class (earth, chemistry, physics) would best cover the standards and in what order. If not, it appears as though there may bea push for all integrated science, which would required district and teacher PD to help wrap minds around the concept.	8/19/2015 6:39 PM
211	Teachers feel this is just another iteration of benchmarks we've been altering for 20 years. Why are we breaking away from the national standards? These are too general and too student centered. They need much more specificity and less feel good "create your own" science. Thanks!	8/19/2015 5:37 PM
212	Teachers should have an opportunity to participate in hands on, informative professional development so that they can experience a model of what these standards might look like in the new science classroom.	8/19/2015 5:18 PM

213	The elementary requirements ask for measurements to be made on things that require equipment that schools just aren't being funded enough for. How are 1st graders going to provide evidence that sound causes materials to vibrate? I don't understand the energy bandwagon. Most scientists have a poor conception of energy and here we have expectations of students to correctly apply energy at various levels in various disciplines but are not consistent from KE/PE to thermal energy (very glad to see heat energy gone though!). No where in any standard do we learn what energy is, which is not to suggest that students before upper high school could understand what energy is, but you have too much expectation for something that is too vague, abstract, mathematical and meaningless. Would we expect students to learn things like chemical changes in digestion if we eliminate the energy shortcut? It would be smart to take all energy objectives and remove energy from them and see which ones are still appropriate before putting any back in. I would gladly help with this if you need the assistance. I love that vocabulary is being minimized and concepts and experimentation are emphasized. If this gets criticized it will be from weaker teachers that have little conceptual understanding. But this is inconsistent. Replace electromagnetic radiation with light. There is very little content for high school, especially coming off of years of adjustments to the HSCEs. Guidance as to what content should be taught should accompany these standards even if it is open for teachers or districts to determine. There is nowhere to put specific comments so here they are: HS-PS1-1 This is too vague, do we mean reactivity, ionization energy, electron affinity, metallic character, electronegativity, physical properties, any, all…… HS-PS1-3 Does this intend to compare intermolecular forces or intermolecular forces with bonds? I like the use of electric forces here. HS-PS1-8 Why are fission and radioactive decay included separately? How are they different? Vague energy reference #1 HS-PS2-6 This is a very broad comment with a lot of very specific material. How is a teacher supposed to prepare a student for this assessment item without any guidance? HS-PS1-2 You state simple reaction, yet the guidance given suggests redox reactions should be taught. Is this intentional or did we just feel like saying fancy things? HS-PS1-4 vague energy reference #2 HS-PS1-5 Is this only for first order processes? Concentration can have no effect on a reaction or large effects and in between. Are we intending to prompt elementary steps into this discussion? HS-PS1-6 This standard has a lot of other chemistry behind it that really should be addressed if this is a desirable objective. Equilibrium is extremely difficult conceptually for students and teachers and if we skip the mathematical treatment you are searching for a very weak algorithmic learning of this objective. HS-PS1-7 The use of representations is confusing here. Are you implying that students should learn that mass before and after a reaction is the same, or are you implying that students should practice stoichiometry calculations. HS-PS3-2 This can be done at the molecular level as well, many just pretend that thermal energy is not a form of kinetic energy for engineering purposes. HS-PS3-4 This is a bad standard that could be much better with more support. As far as I see students do not have a strong or any concept of what temperature is, what occurs that causes temperature changes, nor kinetic energy transfers in elastic collisions based on angle and mass and relative speed. Then a very simple lab experiment is proposed where you want something to decrease in temperature and the other to increase and the second law of thermodynamics tag is applied. There is far too much misconception here without enough guidance for what the purpose is and what the means are to address these misconceptions. HS-PS3-5 The change in energy should be dropped here, magnets accelerate towards each other but a student is likely to see them stop at the end and is unlikely to understand the energy changes during this interaction. Electric charges are not easily visible and coupling energy changes is very difficult. What gain do you hope for from this assignment of energy? Your loss is much larger. HS-PS4-4 Do we have access to papers from Balmer, Lyman etc.? Is that what this is suggesting? HS-PS4-5 vague energy reference HS-LS1-5 vague energy reference HS-LS1-7 vague energy reference HS-LS2-3 vague energy reference HS-LS2-4 vague energy reference HS -ESS1-1 why not use light here instead of radiation? Engineering all - there are too many specifications in each of these designs. Your expectation is too specific for millions of students to all accomplish. MS-PS3-4 Specific heat capacity should be reserved for high school level where teachers are more likely to be aware of the various means that a chemical can "store" energy and why something like water requires more heat to change by the same temperature for a given mass. MS-PS1-1 Why do you say atomic composition of a molecule? Why would you analyze a single atom of a nitrogen molecule? Change this to molecular composition of a molecule. MS-PS1-2 Chemical and physical changes is always vague in the middle and meaningless. Given the sparce amount of content it is disappointing that something useless like this is still present. Where does dissolving fall into this spectrum, complex ions, acid-base reactions? 4-PS3-1 Really? Did we just get lazy at this point? 4-PS3-2 I would love to see someone go into an elementary school and obtain evidence that sound transmits energy. Heat too would be incredibly difficult without some intense supplies. If you have questions you can contact me at scottiemmm@hotmail.com	8/19/2015 5:16 PM

214	The proposed standards reflect the goals of the National Research Council's Framework for K-12 Science Education and the Next Generation Science Standards. Specific attention to the three dimensions of science and the fact that effective instruction blends these three dimensions to create rich learning experiences for students is a huge improvement over our current science standards. As a former high school teacher who is now pursing a PhD in science education, I know firsthand that NGSS represents the type of learning that our students need in order to develop scientific literacy. I also recognize that teachers have not been prepared to meet the goals of NGSS. Michigan will need to develop targeted professional development for ALL MI science teachers in order to improve teachers' pedagogical content knowledge (their ability to implement instructional practices that make rigorous content accessible and meaningful for students). Teachers will need time and support in changing their practice and curriculum to meet the goals of NGSS. Most science teachers acknowledge that the goals of NGSS are lofty but important, and really want to help their students develop the type of scientific literacy described by the performance expectations. However, they rightly worry that they will not be given the time and support they need to transition from their old paradigm for teaching that focused on content delivery that is separate from inquiry standards. The concept of science and engineering practices is foreign to teachers, and thinking about really engaging students in the practices is daunting for most teachers. I have spent the last two years preparing preservice teachers and designing and implementing professional development for inservice teachers around NGSS. I see that it is difficult work, but well worth the effort for the effect that it has on student learning.	8/19/2015 4:52 PM
215	1. I know that chemistry and physics teachers will be complaining that not enough of their topic is covered. Please do not add anymore. These new standards are about making our students feel confident in learning science through critical thinking skills and cross-discipline concepts. These are the most important factors. 2. Many high schools do not have Earth Science as an offering and these new standards are more than one third. Please keep these in! We need to get back to these standards with climate change, sustainability, population growth, etc. 3. We need to emphasize Michigan teaching universities to have science education teachers get DI certification. I know when hiring new staff, that is one requirement.	8/19/2015 4:20 PM
216	I would love to see Michigan move to an educational framework that supports critical thinking, skills that can be utilized in real world contexts, and problem solving. We no longer need students to simply memorize facts; we have adequate technology that can support students in retrieval of facts. I love seeing the verbiage in the standards such as: analyze, construct, apply... This is a vast improvement.	8/19/2015 4:17 PM
217	I am very disappointed that we are moving from a document that is hundreds of pages long with great detail to something that tries to explain everything a high school student should know in 6 pages. It is so vague that teachers will have no idea what depth and breadth the state expects. Most high schools teach separate courses in Chemistry and Physics (consistent with how the state primarily defines graduation requirements) We currently have separate documents for Chemistry and Physics but the new document does not. We are going from a document with about 100 objectives for Chemistry alone to one that has about a dozen high school chemistry standards. I find it difficult to believe that students will be better prepared if we follow the NRC framework instead of the MMC.	8/19/2015 3:56 PM
218	We need curriculum materials and assessments aligned with the new standards. Every teacher and school district should not be expected to create their own MSS-aligned curriculum.	8/19/2015 3:26 PM
219	I find the number of standards for life science (biology) to be overwhelming and out of line in the expectations given a general one year course, especially compared to the other categories: physics,chemistry, and earth science. Chemistry seems to have become relatively unimportant and now earth science needs to be a required course in high school, when in reality MOST schools don't offer high school earth science courses. Now that the state has changed the requirements for high school graduation, this document does NOT seem to align, given that most students will ONLY be required to take high school biology. With so many students now being able to opt out of the traditional science courses and replace the credits with other courses, how can we be accountable for these NUMEROUS standards at the high school level? It is NOT realistic.	8/19/2015 3:25 PM
220	These Standards are written in such a way to help any teacher stress the importance of content to lead to mastery of these Standards. The major difficulty is to assess students in their mastery on state or national tests since the state test is a grade range test, not specifically focused on one year's instruction such as the math and ELA M-Step. It is very difficult to get a true idea of mastery using this type of grade range test. This has been true from the beginning of the science testing! I know that by federal law, ELA and Math must be tested in each grade 3-8 and 11. The focus on instruction for these two subjects is very clear to a classroom teacher. I won't be surprised when the ELA and Math tests show some growth. Science and Social Studies growth will always be a problem until the testing is made to cover a grade level, not a grade span.	8/19/2015 3:09 PM
221	I have read all the public literature about the NGSS and the MSS and still do not understand the lack of development in the Physical science standards. The physical science standards are so incredibly generalized, as an educator I have more questions about what I need to teach to meet those standards. I also have a question that relates to the graduation requirements. Right now a student can graduate with getting approximately 50% of the high school standards. Is that going to continue and the school districts will have to fit the new standards into the graduation requirements? Will the state mandate what courses need to be taken to graduate?	8/19/2015 2:20 PM

222	These standards sound wonderful but we need time to re-align present curriculum and have the funds to implement. In our district we are never given a science budget to plan for the present as well as for the future. We have to beg for time to work on curriculum.	8/19/2015 1:59 PM
223	I was one of nine science teachers who spent last week at Traverse Bay Area ISD creating common assessment items for the new standards, and it was quite a challenge. The standards are written in such a way that adequate assessment of most of them basically amounts to a performance task. I will be most interested in seeing how students are assessed on these standards when the new state test is eventually rolled out.	8/19/2015 1:45 PM
224	My district is one of many that is struggling financially and is in the red. We are concerned that the materials and technology required for some of the new standards, particularly the engineering practices, will not be available in our classrooms without increased state funding.	8/19/2015 1:40 PM
225	I understand the reason for creating these standards but I also think students learn best from a teacher who is passionate about what they are teaching. Science is about discovery and not just making sure this standard is met. We spend so much time as teachers trying to check off our lists we run out of time to focus on what we love about science and pass it on. We also keep getting more rules to follow and more expected as money is being taken away. Online labs do not show how the real science process happens. We are 20 years behind in supplies and technology compared to the colleges and jobs these kids will enter. OK, my rant is over.	8/19/2015 1:19 PM
226	I really like the way the new Michigan Science Standards are written. They are much easier to understand than the K-12 Framework for the nation. I don't understand though why grades 6th-8th aren't specific standards. This makes it very difficult for students to move around during the middle school years throughout Michigan since different districts will have taught different standards in each grade. This also makes it difficult to have a yearly assessment from the state for science. I believe that the state should narrow it down for middle school years like they did for elementary years.	8/19/2015 1:16 PM
227	I disagree with the wording of this standard: MS-LS4-1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. ** The word 'assumption' here is a loaded term. It is an extremely weak statement given the clear and convincing evidence across every scientific discipline that physical processes have worked and continue to work in the same ways they have done for the past 13.7 billion years. The use of the word 'assumption' plays into the hands of sectarian creationist 'worldview' advocates whose most common rhetorical device can be briefly stated as "well, you have your worldview and we have ours." Using the word 'assumption here hands sectarians a tool to illegitimately frame the relationship between sectarian beliefs and scientific understanding as in some sense equally valid.	8/19/2015 1:12 PM
228	These new Michigan Science Standards are something that Michigan Schools need desperately. Our schools/students struggle to teach and learn the material and we all need to be on the same page to help every student succeed.	8/19/2015 1:01 PM
229	The proposed Michigan Science Standards are a good fit with the existing ELA and mathematics standards. They are a nice move away from "knowing science" to actually doing and understanding science. Science by its nature incorporates substantial mathematics, problem solving, reasoning, reading, writing, presenting/communicating, etc. The proposed MI Science Standards take this into account and point the way to move Michigan students to become more science literate AND to become more comfortable in thinking like a scientist.	8/19/2015 12:33 PM
230	The Michigan Science Standards will allow teachers to shift their focus from teaching about science to helping students use scientific knowledge.	8/19/2015 11:30 AM
231	I think most science teachers want a little more direction. The proposed standards are too vague. The NGSS were too specific, there should be a happy medium. I like the format of the current standards, though they do need updating. I like the inclusion of engineering ideas and practices, but most science teachers will need adequate training to encorporate these practices into the classroom.	8/19/2015 8:28 AM
232	It would be VERY helpful if there was a companion document or some other document that explains in depth what the students are expected to do be able to do with each standard. In middle school and high school, decide what needs to be taught at each grade level; similar to what is done in the elementary grades.	8/19/2015 8:24 AM
233	In order to do all that is asked students will need to not only understand the content but they must also be able to show this knowledge in a way that will take extra class time and supplies. I am not sure there is enough time in the school year to do all of this with the necessary emphasis. In addition the supplies necessary will cost money that has had to be removed from the school budget due to state wide budget cuts. My budget has gone from 500$ a year to make a list of what you absolutely need and we will try our best to find the funds. If all students will be held to the same performance of the standards then all students should have the same budget available for the necessary supplies to do so.	8/19/2015 6:08 AM
234	These are so much better than knowing facts.	8/18/2015 10:42 PM

235	Compared to the current GLCEs, these standards seem to be more age-appropriate. Some of the concepts I am currently supposed to teach my 4th and 5th graders (such as the cause of the seasons) are just too difficult for a child that age to understand. These seem much more developmentally appropriate. I would like to see companion documents that would help to break down the standards a little more, with important vocabulary words included. I would also like to see Science Kits that were aligned with these standards. As a science teacher in a financially struggling district, I spend a lot of my own money buying materials so that my students can experience science instead of just reading about it. This somehow needs to be supported at the state level. Teachers try their best with the materials they are given, but often those materials are lacking.	8/18/2015 3:36 PM
236	I support moving to these standards as soon as possible!!!!!	8/18/2015 11:58 AM
237	Teacher professional learning (PD) is incredibly important. If teachers don't understand the target, they will not be able to help their students hit the target.	8/18/2015 11:33 AM
238	I checked some of these because I believe they are more of an issue at the elementary level than at high school for example, improving teacher knowledge or ensuring adequate time for science instruction.	8/18/2015 8:44 AM
239	Since the chemistry content has been gutted, will the state still require all students to take biology and either chemistry or physics?	8/17/2015 9:46 PM
240	Elementary teachers especially will need time to improve content knowledge. Most elementary schools are concerned with reading writing and arithmetic (as they should be). The science standards seem to diverge from learning the basics and goes into far more depth than is necessary for young children.	8/17/2015 9:08 PM
241	Nice job, Michigan! I am proud of my home state (I was a 37 year resident with 12 of those years spent teaching in an elementary classroom and one as an administator) and the direction you are taking with these science standards.	8/17/2015 7:08 PM
242	wrbwrtbwrtbg	8/17/2015 3:46 PM